Curriculum Vitae

Sujit Kumar Bhutia, PhD
Professor
Department of Life Science
National Institute of Technology Rourkela
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Specialization/Research Areas
Autophagy, Apoptosis, Cancer, Phytotherapeutics

Research Interest
Our group is focusing to understand the role of autophagy and autophagy-dependent cell death in cancer for development of novel therapeutics. We are identifying the crucial factors governing the crosstalk between autophagy and apoptosis to describe the mechanisms controlling cell survival and death.

Teaching (Current)
Biology for Engineers, Cell Biology, Cell Signaling, Genomics and Proteomics, Cell Biology laboratory

Academic Background
PhD, Cell Biology and cell death, IIT Kharagpur, 2009
MSc, Botany with Biochemistry, Utkal University, Bubaneswar, 2003
BSc, Botany, Government college Angul, Utkal University, Bhubaneswar, 2001

Professional Experience
Postdoctoral Fellow, Virginia Commonwealth University, USA, 2008 – 2010
Assistant Professor, Department of Life Science, National Institute of Technology, Rourkela
6th August 2008-1st Feb 2018
Associate Professor, Department of Life Science, National Institute of Technology, Rourkela
2nd Feb 2018-28th March 2023
Professor, Department of Life Science, National Institute of Technology, Rourkela
28th March 2023-Present

Administrative Experience
Head of the Department, Department of Life Science, National Institute of Technology Rourkela, 01st Jul 2014 -30th Jun 2017

Honors and Fellowships
- ICMR International Fellowship for Young Indian Biomedical Scientist 2015-16
- Odisha Bigyan Academy Young Scientist Award 2015
- BD Biosciences winner for the research grant program 2013
- National Doctoral Fellow-2005, All Indian Council of Technical Education, India
- Junior Research Fellow-2004, Council for Scientific and Industrial Research, India
- Qualified GATE- 2004 with 99.25 percentile

Details of ongoing/completed projects as PI

Sl. no.	Title of Project	Funding Agency	From Date	To Date	Approved Cost
1	Autophagic cell death with Abrus agglutinin	DBT	24/06/2011	23/06/2014	31,06000
2	DNA damage-induced p73 mediated apoptosis with Abrus agglutinin in oral cancer	CSIR	07/10/2013	06/10/2016	3560000.00
3	Deciphering role of cancer stem cells to therapy resistance in oral cancer	SERB	12/08/2013	11/08/2016	4110000.00
4	Autophagy induced by cellular Stress switches to apoptosis	DBT	07/05/2015	06/05/2018	3621600.00
5	Molecular profiling of apoptotic pathway in cancer stem cells of oral squamous cell carcinoma and its modulating by plant lectins for potential cancer therapeutics	DST, Odisha	01/04/2016	31/03/2019	909000.00
6	Protective autophagy by secretory clusterin associated with cell survival and chemoresistance in oral cancer	BRNS	30/03/2017	29/03/2020	3338400.00
7	Stonin-2 regulated Beclin-1 dependent autophagy and autophagic lysosome Reformation	SERB	29/03/2017	28/03/2020	4572200.00
8	Deciphering role of autophagy in stemness and therapy resistance in oral cancer stem cells	DBT	05/06/2018	04/06/2021	4477200.00
9	Stress induced clearance of dysfunctional mitochondria through PUMA dependent mitophagy	CSIR	11/12/2018	31/03/2023 (ongoing)	2104000.00

10	Analysis of Pax9 methylation in oral carcinogenesis and its reactivation leading to lethal autophagy for potential cancer therapeutics	ICMR	01/03/2021	28/02/2024 (ongoing)	3067200.00
11	Deciphering MTP18 as an inner membrane mitophagy receptor in clearance of damaged mitochondrial subdomains and its relevance in mitoptosis	SERB	29/12/2021	28/12/2024 (ongoing)	53,06,400
12	Analysis of role of MTP18-dependent mitophagy in oral carcinogenesis and its targeting to activate mitochondrial apoptosis for potential cancer therapeutics	BRNS	12/12/2022	11/12/2025 (ongoing)	30,94,500
13	Screening and identification of canonical mitophagy inducing phytochemicals from *Bacopa monnieri* to target NLRP3 inflammasome activation for oral cancer therapeutics	DBT	09/01/2023	08/01/2026 (ongoing)	46,70,240
14	Autophagic degradation of PAX9 to maintain stemness in oral cancer stem cells	DBT	24/01/2023	23/01/2026 (ongoing)	37,00,000
15	Identification and molecular characterization of autophagy inducing chemopreventative molecules from marine microorganisms to target oral squamous cell carcinoma	DST Odisha	24/05/2023	23/05/2026 (ongoing)	11,45,000

Publications

129. Praharaj PP, Singh A, Patra S, **Bhutia SK***. Co-targeting autophagy and NRF2 signaling triggers mitochondrial superoxide to sensitize oral cancer stem cells for cisplatin-induced apoptosis. Free Radic Biol Med. 2023;207:72-88

128. Patra S, Praharaj PP, Singh A, **Bhutia SK***. Targeting SIRT1-regulated autophagic cell death as a novel therapeutic avenue for cancer prevention. Drug Discov Today. 2023;28(9):103692.

127. Panigrahi DP, Praharaj PP, Behera BP, Patra S, Patil S, Patro BS, **Bhutia SK*.** The inner mitochondrial membrane fission protein MTP18 serves as a mitophagy receptor to prevent apoptosis in oral cancer. J Cell Sci. 2023;136(13):jcs259986.

126. Praharaj PP, Patra S, Mishra SR, Mukhopadhyay S, Klionsky DJ, Patil S, **Bhutia SK*.** CLU (clusterin) promotes mitophagic degradation of MSX2 through an AKT-DNM1L/Drp1 axis to maintain SOX2-mediated stemness in oral cancer stem cells. Autophagy. 2023;19(8):2196-2216.

125. Mahapatra KK, Mishra SR, Dhiman R **Bhutia SK*.** Stonin 2 activates lysosomal-mTOR axis for cell survival in oral cancer. Toxicol In Vitro. 2023;88:105561.

124. Patra S, Patil S, Klionsky DJ, **Bhutia SK*.** Lysosome signaling in cell survival and programmed cell death for cellular homeostasis. J Cell Physiol. 2022 (in Press)

123. Panigrahi DP, Patra S, Behera BP, Behera PK, Patil S, Patro BS, Rout L, Sarangi I, **Bhutia SK***. MTP18 inhibition triggers mitochondrial hyperfusion to induce apoptosis through ROS-mediated lysosomal membrane permeabilization-dependent pathway in oral cancer. Free Radic Biol Med. 2022;190:307-319.

122. Tangelloju A, Chakravarti R, Singh R, Bhattacharya B, Ghosh A, **Bhutia SK,** Ravichandiran V, Ghosh D. A Review on the Current Status of Homeopathy in the Clinical Management of Cancer. Curr Drug Targets. 2022;23:1252-1260.

121. Patra S, Patil S, Das S, **Bhutia SK***. Epigenetic dysregulation in autophagy signaling as a driver of viral manifested oral carcinogenesis. Biochim Biophys Acta Mol Basis Dis. 2022;1868:166517.

120. Bhol CS, Mishra SR, Patil S, Sahu SK, Kirtana R, Manna S, Shanmugam MK, Sethi G, Patra SK, **Bhutia SK***. PAX9 reactivation by inhibiting DNA methyltransferase triggers antitumor effect in oral squamous cell carcinoma. Biochim Biophys Acta Mol Basis Dis. 2022;1868(9):166428.

119. Prakash R, Fauzia E, Siddiqui AJ, Yadav SK, Kumari N, Shams MT, Naeem A, Praharaj PP, Khan MA, Bhutia SK, Janowski M, Boltze J, Raza SS. Oxidative Stress-induced Autophagy Compromises Stem Cell Viability. Stem Cells. 2022;40(5):468-478.

118. Panda S, Bhol CS, **Bhutia SK**, Mohapatra S. DSPE-PEG-Coated Uniform Nitrogen-Doped Carbon Capsules for NIR-Mediated Synergistic Chemophototherapy of Skin Cancer. ACS Appl Bio Mater. 2021;4(9):7059-7069.

117. Mahapatra KK, Mishra SR, Behera BP, Patil S, Gewirtz DA, **Bhutia SK***. The lysosome as an imperative regulator of autophagy and cell death. Cell Mol Life Sci. 2021 Dec;78(23):7435-7449.

116. Mukhopadhyay S, Mahapatra KK, Praharaj PP, Patil S, **Bhutia SK*.** Recent progress of autophagy signaling in tumor microenvironment and its targeting for possible cancer therapeutics.

Semin Cancer Biol. 2022;85:196-208

115. Prakash R, Fauzia E, Siddiqui AJ, Yadav SK, Kumari N, Singhai A, Khan MA, Janowski M, Bhutia SK, Raza SS. Oxidative Stress Enhances Autophagy-Mediated Death Of Stem Cells Through Erk1/2 Signaling Pathway - Implications For Neurotransplantations. Stem Cell Rev Rep. 2021 Dec;17(6):2347-2358.

114. Bhutia SK. Vitamin D in autophagy signaling for health and diseases: Insights on potential mechanisms and future perspectives. J Nutr Biochem. 2022;99:108841.

113. Patra S, Praharaj PP, Klionsky DJ, Bhutia SK. Vorinostat in autophagic cell death: A critical insight into autophagy-mediated, -associated and -dependent cell death for cancer prevention. Drug Discov Today. 2022;27(1):269-279.

112. Patra S, Pradhan B, Nayak R, Behera C, Das S, Patra SK, Efferth T, Jena M, **Bhutia SK***. Dietary polyphenols in chemoprevention and synergistic effect in cancer: Clinical evidences and molecular mechanisms of action. Phytomedicine, 2021;90:153554.

111. Naik PP, Panigrahi S, Parida R, Praharaj PP, Bhol CS, Patil S, Manjunath NML, Ghosh D, Patra SK, **Bhutia SK*.** Metabostemness in cancer: Linking metaboloepigenetics and mitophagy in remodeling cancer stem cells. Stem Cell Rev Rep (In Press).

110. Mishra A, Behura A, Kumar A, Naik L, Swain A, Das M, Sarangi SS, Dokania P, Dirisala VR, **Bhutia SK**, Mishra A, Singh R, Dhiman R. P2X7 receptor in multifaceted cellular signalling and its relevance as a potential therapeutic target in different diseases. Eur J Pharmacol. 2021;906:174235.

109. Patra S, Nayak R, Patro S, Pradhan B, Sahu B, Behera C, **Bhutia SK**, Jena M. Chemical diversity of dietary phytochemicals and their mode of chemoprevention. Biotechnol Rep (Amst). 2021;30:e00633.

108. Mishra SR, Mahapatra KK, Behera BP, Patra S, Bhol CS, Panigrahi DP, Praharaj PP, Singh A, Patil S, Dhiman R, **Bhutia SK***. Mitochondrial dysfunction as a driver of NLRP3 inflammasome activation and its modulation through mitophagy for potential therapeutics. Int J Biochem Cell Biol. 2021;136:106013.

107. Bhol CS, Patil S, Sahu BB, Patra SK, **Bhutia SK***. The clinical significance and correlative signaling pathways of paired box gene 9 in development and carcinogenesis. Biochim Biophys Acta Rev Cancer. 2021;1876(1):188561.

106. Panda S, Bhol CS, **Bhutia SK**, Mohapatra S. PEG-PEI-modified gated N-doped mesoporous carbon nanospheres for pH/NIR light-triggered drug release and cancer phototherapy. J Mater Chem B. 2021 May 5;9(17):3666-3676.

105. Patra S, Pradhan B, Nayak R, Behera C, Panda KC, Das S, Jena M, **Bhutia SK***. Apoptosis and autophagy modulating dietary phytochemicals in cancer therapeutics: Current evidences and future perspectives. Phytother Res. 2021 Mar 22.

104. Praharaj PP, Patro BS, **Bhutia SK***. Dysregulation of mitophagy and mitochondrial homeostasis in cancer stem cells: Novel mechanism for anti-cancer stem cell-targeted cancer therapy. Br J Pharmacol. 2021 Feb 1.

103. Patra S, Mahapatra KK, Praharaj PP, Panigrahi DP, Bhol CS, Mishra SR, Behera BP, Singh A, Jena M, **Bhutia SK***. Intricate role of mitochondrial calcium signalling in mitochondrial quality control for regulation of cancer cell fate. Mitochondrion. 2021,57:230-240.

102. Praharaj PP, Patra S, Panigrahi DP, Patra SK, **Bhutia SK***. Clusterin as modulator of carcinogenesis: A potential avenue for targeted cancer therapy. Biochim Biophys Acta Rev Cancer. 2021;1875(2):188500.

101. Mishra A, Behura A, Kumar A, Ghosh A, Naik L, Mawatwal S, Mohanty SS, Mishra A, Saha S, **Bhutia SK**, Singh R, Dhiman R. Soybean lectin induces autophagy through P2RX7 dependent activation of NF-κB-ROS pathway to kill intracellular mycobacteria. Biochim Biophys Acta Gen Subj. 2020;1865(2):129806.

100. Pradhan B, Patra S, Behera C, Nayak R, Patil S, **Bhutia SK**, Jena M. Enteromorpha compressa extract induces anticancer activity through apoptosis and autophagy in oral cancer. Mol Biol Rep. 2020;47(12):9567-9578.

99. Praharaj PP, Panigrahi DP, Bhol CS, Patra S, Mishra SR, Mahapatra KK, Behera BP, Singh A, Patil S, **Bhutia SK***. Mitochondrial rewiring through mitophagy and mitochondrial biogenesis in cancer stem cells: A potential target for anti-CSC cancer therapy. Cancer Lett 2021 ;498:217-228.

98. Naik PP, Mukhopadhyay S, Praharaj PP, Bhol CS, Panigrahi DP, Mahapatra KK, Patra S, Saha S, Panda AK, Panda K, Paul S, Aich P, Patra SK, **Bhutia SK***. Secretory clusterin promotes oral cancer cell survival via inhibiting apoptosis by activation of autophagy in AMPK/mTOR/ULK1 dependent pathway. Life Sci. 2021;264:118722.

97. Patra S, Pradhan B, Nayak R, Behera C, Rout L, Jena M, Efferth T, **Bhutia SK***. Chemotherapeutic efficacy of curcumin and resveratrol against cancer: Chemoprevention, chemoprotection, drug synergism and clinical pharmacokinetics. Semin Cancer Biol. 202;73:310-320.

96. Mishra SR, Mahapatra KK, Behera BP, Bhol CS, Praharaj PP, Panigrahi DP, Patra S, Singh A, Patil S, Dhiman R, Patra SK, **Bhutia SK***. Inflammasomes in cancer: Effect of epigenetic and autophagic modulations. Semin Cancer Biol. (In Press)

95. Pradhan B, Patra S, Nayak R, Behera C, Dash SR, Nayak S, Sahu BB, **Bhutia SK***, Jena M. Multifunctional role of fucoidan, sulfated polysaccharides in human health and disease: A journey under the sea in pursuit of potent therapeutic agents. Int J Biol Macromol. 2020;164:4263-4278.

94. Mukhopadhyay S, Praharaj PP, Naik PP, Talukdar S, Emdad L, Das SK, Fisher PB, **Bhutia SK***. Identification of Annexin A2 as a key mTOR target to induce roller coaster pattern of autophagy fluctuation in stress. Biochim Biophys Acta Mol Basis Dis. 2020;1866(12):165952.

93. Patra S, Praharaj PP, Panigrahi DP, Panda B, Bhol CS, Mahapatra KK, Mishra SR, Behera BP, Jena M, Sethi G, Patil S, Patra SK, **Bhutia SK***. Bioactive compounds from marine invertebrates as potent anticancer drugs: the possible pharmacophores modulating cell death pathways. Mol Biol Rep. 2020;47(9):7209-7228.

92. Patra S, Bhol CS, Panigrahi DP, Praharaj PP, Pradhan B, Jena M, **Bhutia SK***. Gamma irradiation promotes chemo-sensitization potential of gallic acid through attenuation of autophagic flux to trigger apoptosis in an NRF2 inactivation signalling pathway. Free Radic Biol Med. 2020;160:111-124.

91. Patra S, Mishra SR, Behera BP, Mahapatra KK, Panigrahi DP, Bhol CS, Praharaj PP, Sethi G, Patra SK, **Bhutia SK***. Autophagy-modulating phytochemicals in cancer therapeutics: Current evidences and future perspectives. Semin Cancer Biol. (In Press)

90. Saha S, Mahapatra KK, Mishra SR, Mallick S, Negi VD, Sarangi I, Patil SG, Patra SK, **Bhutia SK***. Bacopa monnieri inhibits apoptosis and senescence through mitophagy in human astrocytes. Food Chem Toxicol. 2020:111367.

89. Patra S, Panda PK, Naik PP, Panigrahi DP, Praharaj PP, Bhol CS, Mahapatra KK, Padhi P, Jena M, Patil S, Patra SK, **Bhutia SK***. Terminalia bellirica extract induces anticancer activity through modulation of apoptosis and autophagy in oral squamous cell carcinoma. Food Chem Toxicol. 2020;136:111073.

88. Panigrahi DP, Bhol CS, R N, Nagini S, Patil S, Maiti TK, **Bhutia SK***. Abrus agglutinin inhibits oral carcinogenesis through inactivation of NRF2 signaling pathway. Int J Biol Macromol. 2020;155:1123-1132.

87. Das RK, Panda S, Bhol CS, **Bhutia SK**, Mohapatra S. N-Doped Carbon Quantum Dot (NCQD)-Deposited Carbon Capsules for Synergistic Fluorescence Imaging and Photothermal Therapy of Oral Cancer. Langmuir. 2019;35(47):15320-15329.

86. Panda PK, Patra S, Naik PP, Praharaj PP, Mukhopadhyay S, Meher BR, Gupta PK, Verma RS, Maiti TK, **Bhutia SK*.** Deacetylation of LAMP1 drives lipophagy-dependent generation of free fatty acids by Abrus agglutinin to promote senescence in prostate cancer. J Cell Physiol. 2020;235(3):2776-

2791.

85. Panigrahi DP, Praharaj PP, Bhol CS, Mahapatra KK, Patra S, Behera BP, Mishra SR, **Bhutia SK*.** The emerging, multifaceted role of mitophagy in cancer and cancer therapeutics. Semin Cancer Biol. 2020;66:45-58.

84. Bhol CS, Panigrahi DP, Praharaj PP, Mahapatra KK, Patra S, Mishra SR, Behera BP, **Bhutia SK*.** Epigenetic modifications of autophagy in cancer and cancer therapeutics. Semin Cancer Biol. Semin Cancer Biol. 2020;66:22-33.

83. Mahapatra KK, Panigrahi DP, Praharaj PP, Bhol CS, Patra S, Mishra SR, Behera BP, **Bhutia SK*.** Molecular interplay of autophagy and endocytosis in human health and diseases. Biol Rev Camb Philos Soc. 2019, 94(4):1576-1590.

82. Patra S, Panigrahi DP, Praharaj PP, Bhol CS, Mahapatra KK, Mishra SR, Behera BP, Jena M, **Bhutia SK*.** Dysregulation of histone deacetylases in carcinogenesis and tumor progression: a possible link to apoptosis and autophagy. Cell Mol Life Sci. 2019;76(17):3263-3282.

81. **Bhutia SK*,** Panda PK, Sinha N, Praharaj PP, Bhol CS, Panigrahi DP, Mahapatra KK, Saha S, Patra S, Mishra SR, Behera BP, Patil S, Maiti TK. Plant lectins in cancer therapeutics: Targeting apoptosis and autophagy-dependent cell death. Pharmacol Res. 2019; 144:8-18.

80. Das CK, Parekh A, Parida PK, **Bhutia SK**, Mandal M. Lactate dehydrogenase A regulates autophagy and tamoxifen resistance in breast cancer. Biochim Biophys Acta Mol Cell Res. 2019;1866(6):1004-1018.

79. Sinha N, Meher BR, Naik PP, Panda PK, Mukhapadhyay S, Maiti TK, **Bhutia SK*.** p73 induction by Abrus agglutinin facilitates Snail ubiquitination to inhibit epithelial to mesenchymal transition in oral cancer. Phytomedicine. 2019; 55:179-190.

78. Praharaj PP, Naik PP, Panigrahi DP, Bhol CS, Mahapatra KK, Patra S, Sethi G, **Bhutia SK*.** Intricate role of mitochondrial lipid in mitophagy and mitochondrial apoptosis: its implication in cancer therapeutics. Cell Mol Life Sci.76:1641-1652.

77. Das CK, Jena BC, Banerjee I, das S, Parekh A, **Bhutia SK**, Mandal M. Exosome as a Novel Shuttle for Delivery of Therapeutics across Biological Barriers. Mol Pharm. 2018. 16(1):24-40.

76. Das DN, **Bhutia SK*.** Inevitable dietary exposure of Benzo[a]pyrene: carcinogenic risk assessment an emerging issues and concerns. Curr Opin Food Sci. 2018; 24:16-25.

75. Sophia J, Kowshik J, Dwivedi A, **Bhutia SK**, Manavathi B, Mishra R, Nagini S. Nimbolide, a neem limonoid inhibits cytoprotective autophagy to activate apoptosis via modulation of the PI3K/Akt/GSK-3β signalling pathway in oral cancer. Cell Death Dis. 2018;9(11):1087.

74. Naik PP, Birbrair A, **Bhutia SK*.** Mitophagy-driven metabolic switch reprograms stem cell fate. Cell Mol Life Sci. 2018; 76(1):27-43.

73. Saha S, Panigrahi DP, Patil S, **Bhutia SK*.** Autophagy in health and disease: A comprehensive review. Biomed Pharmacother. 2018; 104:485-495.

72. Sena IFG, Paiva AE, Prazeres PHDM, Azevedo PO, Lousado L, **Bhutia SK**, Salmina AB, Mintz A, Birbrair A. Glioblastoma-activated pericytes support tumor growth via immunosuppression. Cancer Med. 2018;7(4):1232-1239.

71. Panda PK, Naik PP, Praharaj PP, Meher BR, Gupta PK, Verma RS, Maiti TK, Shanmugam MK, Chinnathambi A, Alharbi SA, Sethi G, Agarwal R, **Bhutia SK*.** Abrus agglutinin stimulates BMP-2-dependent differentiation through autophagic degradation of β-catenin in colon cancer stem cells. Mol Carcinog. 2018;57(5):664-677.

70. Praharaj PP, **Bhutia SK**, Nagrath S, Bitting RL, Deep G. Circulating tumor cell-derived organoids: Current challenges and promises in medical research and precision medicine. Biochim Biophys Acta. 2018;1869(2):117-127.

69. Panda PK, Naik PP, Meher BR, Das DN, Mukhopadhyay S, Praharaj PP, Maiti TK, **Bhutia SK***. PUMA dependent mitophagy by Abrus agglutinin contributes to apoptosis through ceramide generation. Biochim Biophys Acta. 2018;1865(3):480-495.

68. Naik PP, Mukhopadhyay S, Panda PK, Sinha N, Mishra R, Patil S, **Bhutia SK*.** Autophagy regulates cisplatin induced stemness and chemoresistance via the upregulation of CD44, ABCB1 and ADAM17 in oral squamous cell carcinoma. Cell Prolif. 2018;51(1).

67. Das DN, Naik PP, Mukhopadhyay S, Panda PK, Sinha N, Meher BR, **Bhutia SK***. Elimination of dysfunctional mitochondria through mitophagy suppresses Benzo[a]pyrene-induced apoptosis. Free Radic Biol Med. 112:452-463.

66. Das DN, Panda PK, Sinha N, Mukhopadhyay S, Naik PP, **Bhutia SK***. DNA damage by 2,3,7,8-tetrachlorodibenzo-p-dioxin-induced p53-mediated apoptosis through activation of cytochrome P450/aryl hydrocarbon receptor. Environ Toxicol Pharmacol 2017; 55:175-185.

65. Sinha N, Panda PK, Naik PP, Das DN, Mukhopadhyay S, Maiti TK, Shanmugam MK, Chinnathambi A, Zayed ME, Alharbi SA, Sethi G, Agarwal R, **Bhutia SK***. Abrus agglutinin promotes irreparable DNA damage by triggering ROS generation followed by ATM-p73 mediated apoptosis in oral squamous cell carcinoma. Mol Carcinog. 2017;56(11):2400-2413.

64. Sinha N, Panda PK, Naik PP, Maiti TK, **Bhutia SK***. Abrus agglutinin targets cancer stem-like cells by eliminating self-renewal capacity accompanied with apoptosis in oral squamous cell

carcinoma. Tumor Biology 2017; 39(5):1010428317701634.

63. Mukhopadhyay S, Schlaepfer IR, Bergman BC, Panda PK, Praharaj PP, Naik PP, Agarwal R, **Bhutia SK***. ATG14 facilitated lipophagy in cancer cells induce ER stress mediated mitoptosis through a ROS dependent pathway. Free Radic Biol Med. 2017; 104:199-213.

62. Das DN, Panda PK, Naik PP, Mukhopadhyay S, Sinha N, Bhutia SK. Phytotherapeutic approach: a new hope for polycyclic aromatic hydrocarbons induced cellular disorders, autophagic and apoptotic cell death. Toxicol Mech Methods. 2017;27(1):1-17.

61. Naik PP, Das DN, Panda PK, Mukhopadhyay S, Sinha N, Praharaj PP, Agarwal R, **Bhutia SK***. Implications of cancer stem cells in developing therapeutic resistance in oral cancer. Oral Oncol. 2016; 62:122-135.

60. Das DN, Naik PP, Nayak A, Panda PK, Mukhopadhyay S, Sinha N, **Bhutia SK***. Bacopa monnieri-Induced Protective Autophagy Inhibits Benzo[a]pyrene-Mediated Apoptosis. Phytother Res. 2016;30(11):1794-1801.

59.Mukhopadhyay S, Naik PP, Panda PK, Sinha N, Das DN, **Bhutia SK***. Serum starvation induces anti-apoptotic cIAP1 to promote mitophagy through ubiquitination. Biochem Biophys Res Commun. 2016;479(4):940-946.

58. Das DN, Sinha N, Naik PP, Panda PK, Mukhopadhyay S, Mallick SK, Sarangi I, **Bhutia SK***. Mutagenic and genotoxic potential of native air borne particulate matter from industrial area of Rourkela city, Odisha, India. Environ Toxicol Pharmacol 2016; 46:131-139.

57. Panda PK, Behera B, Nandini Das D, Mukhopadhyay S, Sinha N, Naik PP, Maiti TK, **Bhutia SK***. Abrus agglutinin, a type II ribosome inactivating protein inhibits Akt/PH domain to induce endoplasmic reticulum stress mediated autophagy-dependent cell death. Mol Carcinog. 2017;56(2):389-401.

56. **Bhutia SK***, Behera B, Nandini Das D, Mukhopadhyay S, Sinha N, Panda PK, Naik PP, Patra SK, Mandal M, Sarkar S, Menezes ME, Talukdar S, Maiti TK, Das SK, Sarkar D, Fisher PB. Abrus agglutinin is a potent anti-proliferative and anti-angiogenic agent in human breast cancer. Int J Cancer. 2016;139(2):457-66.

55. Mukhopadhyay S, Sinha N, Das DN, Panda PK, Naik PP, **Bhutia SK**. Clinical relevance of autophagic therapy in cancer: Investigating the current trends, challenges, and future prospects. Crit Rev Clin Lab Sci. 2016;53(4):228-52.

54. Mukhopadhyay S, Panda PK, Das DN, Sinha N, Naik PP, Bissoyi A, Pramanik K, **Bhutia SK*.** Autophagy protein Ulk1 promote mitochondrial apoptosis through reactive oxygen species. Free

Radic Biol Med 2015; 89:311-2**.**

53. Pal I, Parida S, Prashanth Kumar BN, Banik P, Kumar Dey K, Chakraborty S, **Bhutia SK**, Mandal M. Blockade of autophagy enhances proapoptotic potential of BI-69A11, a novel Akt inhibitor, in colon carcinoma. Eur J Pharmacol. 2015; 765:217-27.

52. Deb M, Sengupta D, Rath SK, Kar S, Parbin S, Shilpi A, Pradhan N, **Bhutia SK,** Roy S, Patra SK. Clusterin gene is predominantly regulated by histone modifications in human colon cancer and ectopic expression of the nuclear isoform induces cell death. Biochim Biophys Acta. 2015;1852(8):1630-1645.

51. Saswati, Chakraborty A, Dash SP, Panda AK, Acharyya R, Biswas A, Mukhopadhyay S, **Bhutia SK**, Crochet A, Patil YP, Nethaji M, Dinda R. Synthesis, X-ray structure and in vitro cytotoxicity studies of Cu(I/II) complexes of thiosemicarbazone: special emphasis on their interactions with DNA. Dalton Trans. 2015;44(13):6140-57.

50. Panda PK, Mukhopadhyay S, Das DN, Sinha N, Naik PP, **Bhutia SK***. Mechanism of autophagic regulation in carcinogenesis and cancer therapeutics. Semin Cell Dev Biol. 2015; 39:43-55.

49. Mohapatra S, Sahu S, Sinha N, **Bhutia SK.** Synthesis of a carbon-dot-based photoluminescent probe for selective and ultrasensitive detection of Hg (2+) in water and living cells. Analyst 2015;140(4):1221-8.

48. Dash SP, Panda AK, Pasayat S, Majumder S, Biswas A, Kaminsky W, Mukhopadhyay S, **Bhutia SK**, Dinda R. Evaluation of the cell cytotoxicity and DNA/BSA binding and cleavage activity of some dioxidovanadium(V) complexes containing aroylhydrazones. J Inorg Biochem 2015; 144:1-12.

47. Panda PK, Mukhopadhyay S, Behera B, Bhol CS, Dey S, Das DN, Sinha N, Bissoyi A, Pramanik K, Maiti TK, **Bhutia SK*.** Antitumor effect of soybean lectin mediated through reactive oxygen species-dependent pathway. Life Sci. 2014; 111:27-35.

46. Dash SP, Panda AK, Pasayat S, Dinda R, Biswas A, Tiekink ER, Patil YP, Nethaji M, Kaminsky W, Mukhopadhyay S, Bhutia SK. Syntheses and structural investigation of some alkali metal ion-mediated LV(V)O2(-) (L(2-) = tridentate ONO ligands)species: DNA binding, photo-induced DNA cleavage and cytotoxic activities. Dalton Trans. 2014;43(26):10139-56.

45. Mukhopadhyay S, Panda PK, Das DN, Sinha N, Behera B, Maiti TK, **Bhutia SK***. Abrus agglutinin suppresses human hepatocellular carcinoma in vitro and in vivo by inducing caspase-mediated cell death. Acta Pharmacol Sin. 2014;35(6):814-24**.**

44. Roy B, Pattanaik AK, Das J, **Bhutia SK**, Behera B, Singh P, Maiti TK. Role of PI3K/Akt/mTOR and MEK/ERK pathway in Concanavalin A induced autophagy in HeLa cells. Chem Biol Interact. 2014; 210:96-102.

43. Mukhopadhyay S, Panda PK, Sinha N, Das DN, **Bhutia SK***. Autophagy and apoptosis: where do they meet? Apoptosis. 2014;19(4):555-66.

42. Mukhopadhyay S, Panda PK, Behera B, Das CK, Hassan MK, Das DN, Sinha N, Bissoyi A, Pramanik K, Maiti TK, **Bhutia SK***. In vitro and in vivo antitumor effects of Peanut agglutinin through induction of apoptotic and autophagic cell death. Food Chem Toxicol. 2014; 64:369-77.

41. Das DN, Panda PK, Mukhopadhyay S, Sinha N, Mallick B, Behera B, Maiti TK, **Bhutia SK***. Prediction and validation of apoptosis through cytochrome P450 activation by benzo[a]pyrene. Chem Biol Interact. 2013;208C:8-17.

40. Dash SP, Pasayat S, Bhakat S, Roy S, Dinda R, Tiekink ER, Mukhopadhyay S, **Bhutia SK**, Hardikar MR, Joshi BN, Patil YP, Nethaji M. Highly Stable Hexacoordinated Nonoxidovanadium(IV) Complexes of Sterically Constrained Ligands: Syntheses, Structure, and Study of Antiproliferative and Insulin Mimetic Activity. Inorg Chem. 2013;52(24):14096-107.

39. Sinha N, Mukhopadhyay S, Das DN, Panda PK, **Bhutia SK***. Relevance of cancer initiating/stem cells in carcinogenesis and therapy resistance in oral cancer. Oral Oncol. 2013;49(9):854-62.

38. Azab B, Dash R, Das SK, **Bhutia SK**, Sarkar S, Shen XN, Quinn BA, Dent P, Dmitriev IP, Wang XY, Curiel DT, Pellecchia M, Reed JC, Sarkar D, Fisher PB. Enhanced prostate cancer gene transfer and therapy using a novel serotype chimera cancer terminator virus (Ad.5/3-CTV). J Cell Physiol 2014;229(1):34-43.

37. **Bhutia SK**, Das SK, Azab B, Menezes M Dent P, Wang XY, Sarkar D, Fisher PB Targeting breast cancer stem/initiating cells with melanoma differentiation associated gene-7/Interleukin-24 (mda-7/IL-24). Int. J cancer 2013; 133(11):2726-36.

36. Das SK, **Bhutia SK**, Azab B, Kegelman TP, Peachy L, Santhekadur PK, Dasgupta S, Dash R, Dent P, Grant S, Emdad L, Pellecchia M, Sarkar D, Fisher PB. MDA-9/Syntenin and IGFBP-2 Promote Angiogenesis in Human Melanoma. Cancer Res. 2013; 73:844-54.

35. Venkatesan P, **Bhutia SK**, Singh AK, Das SK, Dash R, Chaudhury K, Sarkar D, Fisher PB, Mandal M. AEE788 potentiates celecoxib-induced growth inhibition and apoptosis in human colon cancer cells. Life Sci. 2012;91(15-16):789-99.

34. Das SK, **Bhutia SK**, Sokhi UK, Azab B, Su ZZ, Boukerche H, Anwar T, Moen EL, Chatterjee D, Pellecchia M, Sarkar D, Fisher PB. Raf Kinase Inhibitor RKIP Inhibits MDA-9/Syntenin-Mediated Metastasis in Melanoma. Cancer Res. 2012; 72:6217-26.

33. Kar S, Deb M, Sengupta D, Shilpi A, **Bhutia SK**, Patra SK. Intricacies of hedgehog signaling pathways: A perspective in tumorigenesis. Exp Cell Res. 2012; 318:1959-72.

32. Maiti S, Mallick SK, **Bhutia SK,** Behera B, Mandal M, Maiti TK. Antitumor effect of culinary-medicinal oyster mushroom, Pleurotus ostreatus (Jacq.: Fr.) P. Kumm., derived protein fraction on tumor-bearing mice models. Int J Med Mushrooms. 2011;13(5):427-40.

31. Das SK, **Bhutia SK**, Kegelman TP, Peachy L, Oyesanya RA, Dasgupta S, Sokhi UK, Azab B, Dash R, Quinn BA, Kim K, Barral PM, Su ZZ, Boukerche H, Sarkar D, Fisher PB. MDA-9/syntenin: a positive gatekeeper of melanoma metastasis. Front Biosci. 2012; 17:1-15

30. Chen D, Yoo BK, Santhekadur PK, Gredler R, **Bhutia SK,** Das SK, Fuller C, Su ZZ, Fisher PB, Sarkar D. Insulin-like Growth Factor-Binding Protein-7 Functions as a Potential Tumor Suppressor in Hepatocellular Carcinoma. Clin Cancer Res 2011; 17:6693-701.

29. Azab B, Dash R, Das SK, **Bhutia SK,** Shen XN, Quinn BA, Sarkar S, Wang XY, Hedvat M, Dmitriev IP, Curiel DT, Grant S, Dent P, Reed JC, Pellecchia M, Sarkar D, Fisher PB. Enhanced delivery of mda-7/IL-24 using a serotype chimeric adenovirus (Ad.5/3) in combination with the Apogossypol derivative BI-97C1 (Sabutoclax) improves therapeutic efficacy in low CAR colorectal cancer cells. J Cell Physiol. 2011; 227(5):2145-5.

28. Bhutia SK, Das SK, Kegelman TP, Azab B, Dash R, Su ZZ, Wang XY, Rizzi F, Bettuzzi S, Lee SG, Dent P, Grant S, Curiel DT, Sarkar D, Fisher PB. mda-7/IL-24 differentially regulates soluble and nuclear clusterin in prostate cancer. J Cell Physiol. 2011; 227(5):1805-13.

27. Bhutia SK, Das SK, Azab B, Dash R, Su ZZ, Lee SG, Grant S, Yacoub A, Dent P, Curiel DT, Sarkar D, Fisher PB. melanoma differentiation associated gene-7/interleukin-24 (mda-7/IL-24)-induced autophagy switches to apoptosis in prostate cancer cells. Autophagy 2011; 7:1076-7.

26. Bhutia SK, Kegelman TK, Das SK, Azab B, Su ZZ, Lee SG, Sarkar D, Fisher PB. Astrocytes elevated gene-1 activate AMPK in response to cellular metabolic stress and associated with protective autophagy. Autophagy 2011; 5: 547-548

25. Das SK, **Bhutia SK,** Sokhi UK, Dash R, Azab B, Sarkar D, Fisher PB. Human polynucleotide phosphorylase (hPNPase(old-35)): an evolutionary conserved gene with an expanding repertoire of RNA degradation functions. Oncogene. 2011 14;30(15):1733-43.

24. Mallick SK, Maiti S, **Bhutia SK**, Maiti TK. Activation of RAW 264.7cells by Astraeus hygrometricus derived Heteroglucan through MAP kinase pathway. Cell Biol Int. 2011 35:617-21.

23. Bhutia SK, Kegelman TK, Das SK, Azab B, Su ZZ, Lee SG, Sarkar D, Fisher PB. Astrocyte elevated gene-1 induces protective autophagy. Proc Natl Acad Sci U S A. 2010; 107:22243-8. **22.** Dash R, **Bhutia SK**, Azab B, Su ZZ, Quinn BA, Kegelmen TP, Das SK, Kim K, Lee SG, Park MA, Yacoub A, Rahmani M, Emdad L, Dmitriev IP, Wang XY, Sarkar D, Grant S, Dent P, Curiel DT, Fisher PB.

mda-7/IL-24: A unique member of the IL-10 gene family promoting cancer-targeted toxicity. Cytokine Growth Factor Rev 2010; 21(5):381-91.

21. Dent P, Yacoub A, Hamed HA, Park MA, Dash R, **Bhutia SK,** Sarkar D, Wang XY, Gupta P, Emdad L, Lebedeva IV, Sauane M, Su ZZ, Rahmani M, Broaddus WC, Young HF, Lesniak MS, Grant S, Curiel DT, Fisher PB. The development of MDA-7/IL-24 as a cancer therapeutic. Pharmacol Ther. 2010; 128:375-384**.**

20. Dent P, Yacoub A, Hamed HA, Park MA, Dash R, **Bhutia SK,** Sarkar D, Gupta P, Emdad L, Lebedeva IV, Sauane M, Su ZZ, Rahmani M, Broaddus WC, Young HF, Lesniak M, Grant S, Curiel DT, Fisher PB. MDA-7/IL-24 as a cancer therapeutic: from bench to bedside. Anticancer Drugs. 2010; 21:725-731**.**

19. Das SK, Sokhi UK, **Bhutia SK,** Azab B, Su ZZ, Sarkar D, Fisher PB. Human polynucleotide phosphorylase selectively and preferentially degrades microRNA-221 in human melanoma cells. Proc Natl Acad Sci USA 2010; 107:11948-11953.

18. Mallick SK, Maiti S, **Bhutia SK**, Maiti TK. Immunostimulatory properties of a polysaccharide isolated from Astraeus hygrometricus. J Med Food 2010; 13:665-672.

17. Mallick SK, Maiti S, **Bhutia SK,** Maiti TK. Antitumor properties of a Heteroglucan isolated from Astraeus hygrometricus on Dalton's Lymphoma bearing mouse. Food Chem Toxicol 2010; 48; 2115–2121.

16. Dash R, Richards JE, Su ZZ, **Bhutia SK,** Azab B, Rahmani M, Dasmahapatra G, Yacoub A, Dent P, Dmitriev IP, Curiel DT, Grant S, Pellecchia M, Reed JC, Sarkar D, Fisher PB. Mechanism by which Mcl-1 regulates cancer-specific apoptosis triggered by mda-7/IL-24, an IL-10-related cytokine. Cancer Res 2010; 70:5034-5045**.**

15. Bhutia SK, Dash R, Das SK, Azab B, Su ZZ, Lee SG, Grant S, Yacoub A, Dent P, Curiel DT, Sarkar D, Fisher PB. Mechanism of autophagy to apoptosis switch triggered in prostate cancer cells by antitumor cytokine melanoma differentiation-associated gene 7/interleukin-24. Cancer Res 2010; 70:3667-3676.

14. **Bhutia SK,** Mallick SK, Maiti TK. Tumour escape mechanisms and their therapeutic implications in combination tumour therapy. Cell Biol Int 2010; 34:553-563**.**

13. Dash R, Dmitriev I, Su ZZ, **Bhutia SK,** Azab B, Vozhilla N, Yacoub A, Dent P, Curiel DT, Sarkar D, Fisher PB. Enhanced delivery of mda-7/IL-24 using a serotype chimeric adenovirus (Ad.5/3) improves therapeutic efficacy in low CAR prostate cancer cells. Cancer Gene Ther 2010; 1–10.

12. Mallick SK, **Bhutia SK,** Maiti TK. Macrophage Stimulation by Polysaccharides Isolated from

Barometer Earthstar Mushroom, Astraeus hygrometricus (Pers.) Morgan (Gasteromycetideae). Int J Med Mushrooms 2009; 11: 237-248.

11. Bhutia SK, Mallick SK, Maiti S, Mishra D, Maiti TK. Abrus abrin derived peptides induce apoptosis by targeting mitochondria in HeLa cells. Cell Biol Int 2009; 33:720-727.

10. Bhutia SK, Mallick SK, Maiti TK. In vitro immunostimulatory properties of Abrus lectins derived peptides in tumor bearing mice. Phytomedicine. 2009; 16:776-782.

9. Ghosh D, **Bhutia SK,** Mallick SK, Banerjee I, Maiti TK. Stimulation of murine B and T lymphocytes by native and heat-denatured Abrus agglutinin. Immunobiology. 2009; 214:227-234.

8. Bhutia SK, Mallick SK, Maiti S, Maiti TK. Inhibitory effect of Abrus abrin-derived peptide fraction against Dalton's lymphoma ascites model. Phytomedicine. 2009; 16:377-385.

7. Bhutia SK, Maiti TK. Targeting tumors with peptides from natural sources. Trends Biotechnol. 2008; 26:210-217.

6. **Bhutia SK,** Mallick SK, Maiti S, Maiti TK. Antitumor and proapoptotic effect of Abrus agglutinin derived peptide in Dalton's lymphoma tumor model. Chem Biol Interact 2008; 174:11-18**.**

5. Maiti S, **Bhutia SK,** Mallick SK, Kumar A, Khargi N, Maiti TK. Antiproliferative and immunostimulatory protein fraction from edible mushrooms. Environmental Toxicology and Pharmacology 2008; 26; 187-191**.**

4. Bhutia SK, Mallick SK, Stevens SM, Prokai L, Vishwanatha JK, Maiti TK. Induction of mitochondria-dependent apoptosis by Abrus agglutinin derived peptides in human cervical cancer cell. Toxicol In Vitro. 2008; 22:344-351.

3. Das T, Mallick SK, Paul D, **Bhutia SK,** Bhattacharyya TK, Maiti TK. Microcontact printing of Concanavalin A and its effect on mammalian cell morphology. J Colloid Interface Sci 2007; 314:71-79.

2. Shah S, Ghosh D, Sarangi I, Mallick SK, **Bhutia SK,** Banerjee I, Maiti S, Maiti TK. Immunomodulatory and Antitumor Activities of Water-Soluble Proteoglycan Isolated from the Fruiting Bodies of Culinary-Medicinal Oyster Mushroom Pleurotus ostreatus (Jacq.: Fr.) P. Kumm. (Agaricomycetideae). Int J Med Mushrooms 2007; 9: 123-138.

1. Sarangi I, Ghosh D, **Bhutia SK,** Mallick SK, Maiti TK. Antitumor and immunomodulating effects of Pleurotus ostreatus mycelia-derived proteoglycans. Int Immunopharmacol 2006; 6:1287-97.