

BIODATA



Name: *Fayaz A Malik*
Current Position: *Scientist 'C'*
Academic Record: *M. Sc, Ph. D*
Research Area: *Cancer Research and drug discovery*

Area of interest:

My research interests are focused in the areas of cancer biology and cancer pharmacology, in particular the identification and validation of new molecularly targeted agents and their translation into clinical applications. Major objectives of my group are aimed at studying the role of natural products in targeting critical tumor promoting pathways involving protein kinase network and tumor microenvironment. Other areas of interest are studying immune modifiers for their potential role in the development of immune adjuvant.

Scientific contribution:

I have been engaged in the development of anti-cancer therapeutics from medicinal plants by providing scientific based evidence and mechanism of action. All these discoveries are based on their differential mechanisms of action targeting several apoptosis signaling pathways in the cancer cells (published and patented) as well as their role in the activation of tumor reactive immune system.

Fellowships and memberships of professional bodies:

- *DBT fellowship after qualifying All India Entrance Test for admission to M.Sc Biotechnology.*
- *CSIR- Senior Research fellowship during PhD.*
- *Member of Indian association of Cancer research.*

Awards and prizes:

- ❖ *CSIR Young Scientist Award (2009) for Biological Sciences*
- ❖ *Best paper award 2009, Indian Institute of Integrative Medicine.*
- ❖ *Best paper award 2007, Indian Institute of Integrative Medicine.*

Present Group: *Cancer Drug discovery*

List of Publications in peer reviews journals:

- **Fayaz Malik**, Ajay Kumar, Shashi Bhushan, Dilip Mondhe, Harish Pal, et al., *Immune modulation and apoptosis induction: Two sides of anti tumoral activity of a standardized herbal formulation of Withania somnifera* **European Journal of Cancer** (2009) 45(8):1494-509.

- Sheema Khan, **Fayaz Malik**, Krishan A Suri and Jaswant Singh. Molecular insight into the immune up-regulatory properties of the leaf extract of *Ashwagandha* and identification of Th1 immunostimulatory chemical entity *Vaccine* (2009): *in press*
- Shashi Bhushan, **Fayaz Malik**, Ajay Kumar, Indu Pal Kaur, Subhash Chandra Taneja, Jaswant Singh. Activation of p53/p21/PUMA alliance and disruption of PI-3/Akt in multimodal targeting of apoptotic signaling cascades in cervical cancer cells by a pentacyclic triterpenediol from *Boswellia serrata* *Molecular Carcinogenesis* (2009) (Accepted)
- Khajuria A, Gupta A, Suden P, Singh S, **Malik F**, Singh J, Gupta BD, Suri KA, Srinivas VK, Ella K, Qazi GN. Immunomodulatory activity of biopolymeric fraction BOS 2000 from *Boswellia serrata*. *Phytother Res.* (2008)3:340-8.
- Kumar A, **Malik F**, Bhushan S, Sethi VK, Shahi AK, Kaur J, Taneja SC, Qazi GN, Singh J. An essential oil and its major constituent isointermedeol induce apoptosis by increased expression of mitochondrial cytochrome c and apical death receptors in human leukaemia HL-60 cells. *Chem. Biol. Interact.* (2008) 171(3):332-47.
- **Fayaz Malik** , Ajay Kumar, Shashi Bhushan, Sheema Khan, Aruna Bhatia, Krishan Avtar Suri, Ghulam Nabi Qazi and Jaswant Singh. Reactive oxygen species generation and mitochondrial dysfunction in the apoptotic cell death of human myeloid leukemia HL-60 cells by a dietary compound withaferin A with concomitant protection by N-acetyl cysteine. *Apoptosis* (2007) 12:2115-2133.
- Shashi Bhushan, Ajay Kumar, **Fayaz Malik**, Samar Singh Andotra, Vijay Kumar Sethi, Indu Pal Kaur, Subhash Chandra Taneja, Ghulam Nabi Qazi and Jaswant Singh. A triterpenediol from *Boswellia serrata* induces apoptosis through both the intrinsic and extrinsic apoptotic pathways in human leukemia HL-60 cells. *Apoptosis* (2007) 12:1911-1926.
- Anamika Khajuria, Amit Gupta, Surjeet Singh, **Fayaz Malik**, Jaswant Singh, K.A. Suri, N.K. Satti, G.N. Qazi, V.K. Srinivas, Gopinathan. RLJ-NE-299A: A new plant based vaccine adjuvant. *Vaccine* (2007) 25: 2706-2715.
- **Fayaz Malik** , Jaswant Singh ,Anamika Khajuria , Krishan A. Suri , Naresh K. Satti, Surjeet Singh , Maharaj K. Kaul c, Arun Kumar c, Aruna Bhatia d, Ghulam N. Qazi. A standardized root extract of *Withania somnifera* and its major constituent withanolide-A elicit humoral and cell-mediated immune responses by up regulation of Th1-dominant polarization in BALB/c mice. *Life sciences* (2007) 80:1525-38.
- Anamika Khajuria, Amit Gupta, **Fayaz Malik**, Surjeet Singh, Jaswant Singh, Pankaj Suden, B.D.Gupta, K.A.Suri, V.K.Srinivas, Krishna Ella, G.N. Qazi. A

new vaccine adjuvant (BOS 2000) a potent enhancer mixed Th1/Th2 immune responses in mice immunized with HBsAg. *Vaccine* (2007) 25: 4586-4594.

- **Fayaz Malik**, Jaswant Singh, A Bhatia and G N Qazi. Multiple therapeutic target based novel herbal formulation with anticancer and immunostimulatory activities (Abstract) *European Journal of Cancer, Supplements* (2007) Vol. 5(4) pg. 89.

List of patents:

- A Plant based vaccine adjuvant. A. Khajuria, A. Gupta, S.Singh, **F. Malik**, Jaswant Singh, KL Bedi, KA Suri, NK Satti, OP Suri, GN Qazi, VK Srinivas, Gopinathan, K Ella. EP 1 837 027 A1 [005NF2006 (0614/DEL/2006)]
- Induction of apoptosis in cancer cells by a natural product from *Boswellia* species for its usefulness as anti-cancer agent. G.N.Qazi, S.C.Taneja, Jaswant Singh, A.K. Saxena, V.K.Sethi, D.M.Mondhe, B.K.Kapahi, S.Bhushan, S.S.Andotra, Samar.Singh, B.Shah, S.Singh, H.C.Pal, **F. Malik**, A.Kumar, M. Sharma. [0151NF2006 Dt.31/05/2006] (0570 DEL2007 Dt. 16/03/07)
- Semi-synthetic sesquiterpene lactone parthenin compound useful for anticancer activity. Qazi, Ghulam Nabi, Taneja Subash Chandra., Singh, Jaswant; Saxena Ajit Kumar; Sethi Vijay Kumar; Shah Bhahwal Ali, Kumar Ajay, Andotra Samar Singh, **Malik, Fayaz**; Muthiah Shanmugavel, Agarwal, Satyam Kumar [(0207NF-2006/IN Dt. 11/09/2006; 0839 DEL2008 Dt. 31/03/2008)]
- Semi-synthetic sesquiterpene lactone parthenin compound useful for cytotoxicity against cancer cell lines and anti-cancer activity. Qazi, Ghulam Nabi, Taneja Subash Chandra.; Singh, Jaswant; Saxena Ajit Kumar; Sethi Vijay Kumar; Shah Bhahwal Ali, Kumar Ajay, Andotra Samar Singh, **Malik, Fayaz**; Muthiah Shanmugavel, Agarwal, Satyam Kumar. [(0062NF2008/IN Dt. 24/03/2008; 0840 DEL2008 Dt. 31/03/2008)]
- In Vitro and In Vivo anti-cancer activity of semi-synthetic compounds. Qazi, G.N.; Taneja, S.C.; Singh, Jaswant; Saxena, A.K.; Sethi, V.K.; Shah, B.A.; Kapahi, B.K.; Andotra, S.S.; Kumar, Ajay; Bhushan, Shashi; **Malik, Fayaz**; Mondhe, D.M.; Muthiah, Shanmugavel; Singh, Surjeet; Verma, Monika and Singh, Shashank Kumar. [0201 NF 2006 Dt. 01/09/2006; 0606 DEL2008 Dt. 11/03/2008]
- A synergistic non-toxic herbal formulation extracted from *Withania Somnifera* useful for anti-cancer and Th1-dominant immune up regulating activities. Qazi, G.N.; Singh, Jaswant; **Malik, Fayaz**; Saxena, A.K.; Suri, K.A., Satti, N.K.;Kumar, Arun; Kumar, Ajay; Bhushan, S.; Khan, I.; Mondhe, D.M.; Shanmugavel, M.; Chandra, H.; Gupta, A.; Kumar, M.; Sharma, S. and Singh, S. [0202NF2006/IN Dt 06/09/2006; 1321DEL 2007 Dt. 19/06/2007]

Book chapter:

- Jaswant Singh, **Fayaz Malik** and G. N. Qazi. Protective role of tea against cancer and infectious diseases through immune activation; Chapter 33; Pg 341-351(2008). In: *Global advances in Tea Science Book-3 "Economic Crisis in Tea Industry, Strategies for scientific management"* (Eds., N. K. Jain, John Weisburger and Maqsood Siddiqi), CABI Publishers, U.K

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