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|  | **program Information** | | |
| **NO.** | |  | |
| **Program Type** | | Degree Based …………….....  Non degree-Based ……..…. | □  □ |
| **Level of Study** | | Undergraduate ………..……  Master …………………..……...  PhD ………………………..…….  Post Doc …………………..…..  Specialty ………………..…….  Subspecialty …………………  Fellowship ……………..……..  Short term Course ………… | □  □  □  □ OR  □  □ |
| **School** | | School of Medicine, Mashhad University of Medical Sciences | |
| **Department** | | New Sciences and Technologies | |
| **Major/ Name of Program** | | Post-doc in oncology  (Title: Antitumor effect of different forms/prodrugs of novel curcumin in Pancreatic ductal adenocarcinoma and hepatocellular carcinoma) | |
| **Keywords (3 Words)** | | Pancreatic ductal adenocarcinoma, hepatocellular carcinoma Curcumin, Antitumor | |
| **Language Requirement** | | English | |
| **Admission Requirement** | | MSc or Ph.D. in Biomedical/Biomolecular Sciences, Cancer, Oncology | |
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| **Description (500 words)** | | Pancreatic Ductal Adenocarcinoma (PDAC) and Hepatocellular Carcinoma are respectively the fourth leading and the most common type of Liver Cancer, cause of cancer related death with poor extremely prognosis mainly because of its metastatic spread and resistance to Chemotherapy. This program is carried supporting the identification of novel agents to overcome these problems.  The antitumor activity of curcumin has been investigated in different tumor types.  Therefore, in the present study, we will explore different forms of novel curcumin with a higher potential of penetrating into tumor. Moreover, the molecular mechanism underlying the anticancer activity of curcumin will be evaluated in vitro and in vivo in different PDAC cells and Huh7 cell lines. | |
| **Complete Description** | | PDAC cells and Huh 7 cells will be cultured in monolayer model. MTT assay will be employed to evaluate the viability of the cells. The cytotoxicity of curcumin will be investigated in 3 dimensional cell culture model (spheroid), as described recently (Avan et al., Cancer Res, 2015; Avan et al., Clin Oncol. 2015; Avan et al., Oncotarget. 2014 Jul 30;5(14):5335-49).  Invasion assay will be used to assess the invasive behavior of Huh 7 cells before and after treatment with curcumin (Maftouh, Avan et al., Bri J Cancer 2014; Giovannetti E, Wang Q, Avan A, et al., J Natl Cancer Inst. 2014 Jan;106(1):djt346).  The expression pattern of some genes involved in apoptosis, migration, as well as the markers of NF-kB pathway, will be evaluated by real-time quantitative RT-PCR and WB, ELISA, Immunocytochemistry, and Immunohistochemistry (Avan et al., Cancer Res. 2013 Nov 15;73(22):6745-56; Giovannetti E, Wang Q, Avan A, et al., J Natl Cancer Inst. 2014 Jan;106(1):djt346; Avan et al., Mol Cancer Therp, 2012).  The anticancer effect of these agents will be evaluated in vivo in order to explore the antitumor activity of these novel prodrugs (Avan et al., Cancer Res. 2013 Nov 15;73(22):6745-56; Cancer. 2015 Jul 28. doi: 10.1002/cncr.29598; Giovannetti E, Wang Q, Avan A, et al., J Natl Cancer Inst. 2014 Jan;106(1):djt346)  To get more information about this project, please contact the group leader and read more information from our previous recent publications.  Dr. Avan  <http://www.ncbi.nlm.nih.gov/pubmed/?term=avan+a>  Dr. Sahebkar  <http://www.ncbi.nlm.nih.gov/pubmed/?term=sahebkar+A>  Prof. E. Giovannetti  <http://www.ncbi.nlm.nih.gov/pubmed/?term=Giovannetti+E>  Prof. GJ Peters  http://www.ncbi.nlm.nih.gov/pubmed/?term=peters+GJ | |
| **Program Detail** | | In the current program, we will run this research program, as described above, together with some related courses, including Molecular Medical Genetics, Molecular Biology Techniques , Bioinformatics and Innovative Cancer Therapy | |