

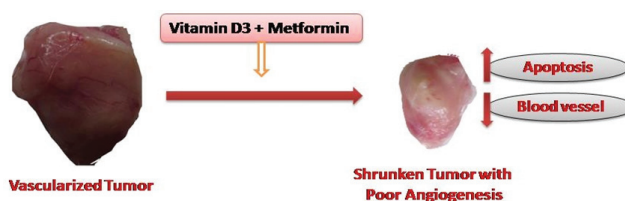
## Testing the efficacy of vitamin D3 and metformin to retard the development of subcutaneous ehrlich ascites carcinomas *in-vivo*

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Vitamin D3 and metformin are widely used in humans for regulating mineral metabolism and blood glucose levels, respectively. Interestingly these two agents have also shown to exhibit chemo preventive effects against various carcinoma cells *in vitro* and *in vivo*. But it is not known, whether combining these two anti-cancer agents helps in synergistic tumor growth inhibition. Therefore, in this study the potency of combining Vitamin-D3 and Metformin was investigated against EAC cells

injected solid tumor model. Experimentally, EAC bearing mice were given Vitamin D3 (125µg/kg and 250µg/kg) and Metformin (125mg/kg and 250mg/kg) alone or in combination (VD3 125µg/kg + M 125mg/kg) in a simultaneous and sequentially treatment regimens and tumor weight recorded at the end of the experiment. Analysis of the data showed an about 52% and 59% growth inhibition with VD3 125µg/kg and 250µg/kg, respectively, whereas the administration of Metformin yielded 57% and 62% growth inhibition at 125mg/kg and 250mg/kg, respectively. Simultaneous administration of 125µg/kg VD3 and 125mg/kg Metformin reduced the tumor weight by 63% indicating a marginal increase in the treatment efficacy. However, no such increase in the efficacy was observed when these two drugs administered sequentially. Mechanistically, VD3 and Metformin inhibited the development of blood vessels and induced apoptosis in tumors. In conclusion, our data suggest simultaneous administration of VD3 and Metformin for treating cancers.



**Simultaneous VD3 and Metformin inhibit EAC solid tumors in mice by promoting apoptosis and retarding angiogenesis:**

### Biography

Prashanth kumar M V is an Indian council of medical research (ICMR) Senior Research Fellow at Centre for excellence in Molecular Biology and Regenerative Medicine (CEMR), Department of Biochemistry, JSS Medical College, JSS Academy of Higher Education and Research (JSS- AHE&R), Mysuru. His work focuses on developing the combination therapies on anti-cancer agent for treating breast cancers by repurposing the existing drugs. He has identified Vitamin D3 and Anti-diabetic drug Metformin combination for breast cancer treatment *in vitro* and *in vivo* model. As a Principle Investigator he has received research fund from the home university for his excellence work on V-D3 and Metformin as anti-cancer agents on Breast cancer cell line. He has published his work in national and international reputed peer reviewed journals. He has Presented posters, delivered an oral talk as delegate speaker and received best oral presentation award in national and international conferences.

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