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### Investigating S100A4 as therapeutic target *vis-a-vis* employability of Ayurvedic concepts for advanced research and clinical relevance

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S100A4 is a Ca<sup>2+</sup> binding protein, associated with metastasis in many forms of cancer and has also been identified as a diagnostic and prognostic marker in breast cancer metastasis. In the past years scientists have shown that S100A4 binds with both intracellular and extracellular secondary protein partners to mediate the processes like EMT leading to motility and invasion, cell death and angiogenesis. This gave us a background that S100A4 can be employed as a therapeutic target for metastasis. We screened some novel compounds using Autodock4 which showed that they interact with the active site of S100A4 and have the potential to restrict its binding with secondary protein partners. The simulation studies were done using GROMACS to look at finer details of the interactions. While looking at these details which will lead to development of targeted therapies with an individualized approach, we wondered about the biological relevance of these structural interactions and possibility of translating this into an effective therapy. On the other hand approaches like Ayurveda have reports and evidences which redefine the fundamental biological principles in complete holistic sense and have the potential to open investigations for personalized and integrative medicine for even the most complicated diseases to understand, such as cancer metastasis. We in our lab and at Anvaya Biosciences are focused on developing an amalgamated platform where we can employ concepts of Tridosha, Saptadhatu and Panchmahabhutas together with tools of genomics and proteomics to come up with integrative therapies which can be employed clinically.

#### Biography

Vivek Sharma has completed his Master of Research (MRes) in Molecular Oncology from Institute of Integrative Biology, University of Liverpool, UK and MSc in Biotechnology from the Department of Biotechnology, Punjabi University, India. He is currently working as an Assistant Professor at Division of Cancer Research, Department of Biotechnology, Chandigarh Group of Colleges, India. He has published papers in reputed journals and national and international conferences in UK and India. He has won a Graduate Entrepreneur Award from University of Liverpool, UK as a result of which he is developing an enterprise focused on bringing together basic elements of Ayurvedic sciences and contemporary biological sciences.

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