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Dear Committee Members,

I am writing this letter to convey my strongest support to the nomination of Ms. Ananya Sharma for the Sun Pharma Scholar Award in the field of Biomedical Sciences. Ananya is a 3rd year Ph.D. student in the Department of Bioengineering, Indian Institute of Science, IISc Bangalore. Ananya's core research training has been in Biotechnology (MS, IIT Gandhinagar) and Bioengineering (Ph.D., IISc).

In her doctoral thesis work, Ananya proposes to improve therapeutic outcomes in cancer patients through different medical imaging interventions, and discovery of new imaging biomarkers, and mainly focuses on photoacoustic imaging as the modality of choice. In one of her research works, she has focused on design and development of a new class of theranostic agents that can be employed for both photodynamic therapy (PDT) and photoacoustic contrast generation. These contrast agents unlike most of the current PDT agents that absorb in the visible range, can absorb in the near-infrared (NIR) region and therefore can generate contrast at enhanced penetration depths. The novelty also lies with the ability to follow the PDT treatment response with the same molecule as they can also function as photoacoustic diagnostic probes. This could be a potential gamechanger in the field as often with a majority of treatment methods such as PDT, the clinician is unable to noninvasively assess the effectiveness of the treatment, without invasive excision of tissue at site of PDT. Photoacoustic imaging is an emerging radiology method that can image deeper into tissues (5~cm depth) compared to optical agents with good spatial and temporal resolution. Currently, FDA has approved the use of photoacoustic imaging in clinics for breast cancer diagnosis (2021) and therefore this technology and our novel theranostic agents have excellent potential for future clinical translations.

The manner in which Ananya has brilliantly designed and executed this research idea is a testament to her strength as an excellent researcher. She has the potential to excel and her perseverance, critical thinking and intellectual ability are the main reasons behind the success of such a challenging idea. Therefore, I feel strongly justified in nominating her for this scholar award. If you have any further queries, please do not hesitate to contact me at sanhitas@iisc.ac.in

Best Regards,

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