β-glucogallin from Emblica officinalis as a chemopreventive agent against breast cancer

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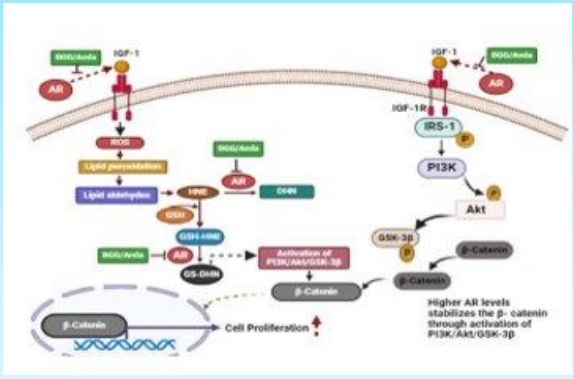
About the Technology: The technology is based on the principle that β-glucogallin (BGG), a natural polyphenol from Amla, acts as a potent inhibitor of aldose reductase (AR)-a key enzyme linking obesity, diabetes, and cancer. By blocking AR-driven oncogenic signaling pathways (IGF-1/PI3K/Akt/GSK3β/β-catenin), BGG prevents breast tumor initiation and progression, offering a safe, dietary-grade chemopreventive strategy

Technology ID: ICMR/EoI/PM/19/β-glucogallin Chemoprotactant/2026
Lead Inventor: Dr. G. Bhanuprakash Reddy
Institute: ICMR - National Institute of Nutrition
Technology Domain: Therapeutics

Need and utility of the Technology from Public health perspective: β-glucogallin provides a safe, dietary-grade strategy for preventing breast cancer by targeting metabolic risk pathways linked to obesity and diabetes.

Technology Readiness level (TRL):

TRL-4: Validated at in house laboratory



Validation Status and Study Outcome:

- Inhouse Validation –Complete
- Efficacy Outcome: β-glucogallin demonstrated strong chemopreventive efficacy by reducing tumor incidence from 62% to 16% in obese rats & achieving 0% incidence in lean rats.

Market Potential: Rising cancer burden together with increasing obesity and diabetes prevalence is driving demand for safe, dietary-grade chemopreventive agents, positioning β-glucogallin as a promising candidate for nutraceutical and preventive oncology markets.

Publication: NA

IP Filing: Yes, ICMR has filed the patent and IPR Application Number: 202411073461