2. Aims and Objectives

2.1. Rationale of hypothesis

Abundant evidence suggested the cGAS and STING play critical roles in the activation of the immune response during viral infections, pathogenic dsDNA sensed by cGAS, and further activate type-1 interferon and proinflammatory cytokines. In breast cancer therapy chemotherapy consider classical therapy and continue in use. DNA generated during chemotherapy and sense of self dsDNA and further activation of the cGAS-STING pathway in tumorigenesis are not well understood. Further cGAS-STING pathway intactness plays a critical role in further activation of type-1 interferon response and proinflammatory cytokines. cGAS-STING expression in breast cancer not known. Further the exploitation of type-1 interferon and cytokines generated by the cGAS-STING pathway in breast cancer. Type-1 interferon in tumor microenvironment plays a critical role in anti-cancer therapy. Here we hypothesis that the exploring activation of cGAS STING cross-talk during DNA damage and exploitation of the cGAS-STING pathway in anti-cancer therapy.

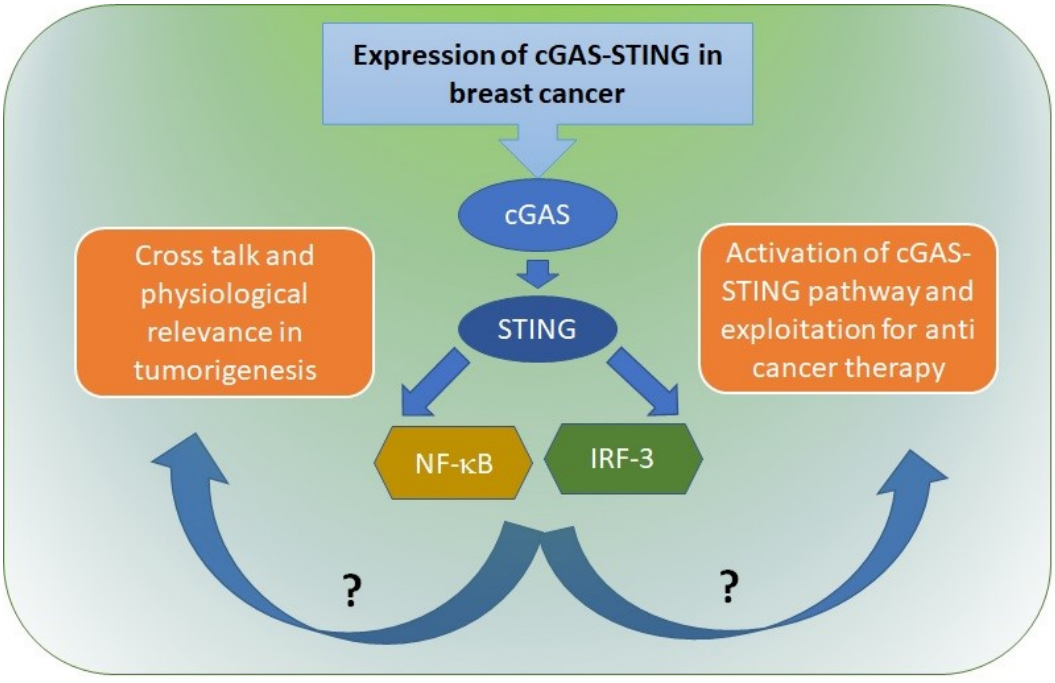

Figure 5 Diagrammatic representation of the hypothesis of the study

2.2. Objectives

- To study the expression of cGAS and STING in different breast cancer cell lines as well as patients' tissues
- To study the crosstalk between cGAS and STING and its effect on tumorigenesis of breast cancer
- To study the role of cGAS and STING in the context of anti-tumor activity