

LIST OF FIGURES

FIGURE 1 SCHEMATIC DIAGRAM OF THE LINEAR PROTEIN STRUCTURE OF cGAS, STING, AND OVERVIEW OF THE cGAS-STING PATHWAY	19
FIGURE 2 SCHEMATIC REPRESENTATION OF NETWORK REGULATING cGAS	27
FIGURE 3 MECHANISMS OF STING ACTIVATION.....	32
FIGURE 4 ROLE OF THE cGAS-STING SIGNALING PATHWAY IN ANTITUMOR IMMUNITY	37
FIGURE 5 DIAGRAMMATIC REPRESENTATION OF THE HYPOTHESIS OF THE STUDY	47
FIGURE 6 EXPRESSION PATTERN OF cGAS AND STING IN DIFFERENT BREAST CANCER CELLS	60
FIGURE 7 EXPRESSION PATTERN OF cGAS AND STING IN DIFFERENT BREAST CANCER PATIENTS.....	61
FIGURE 8 DNA DAMAGE INDUCES NF- κ B ACTIVATION IN STING-POSITIVE TRIPLE-NEGATIVE BREAST CANCER CELLS.....	66
FIGURE 9 STING MEDIATED NF- κ B INDUCES IL-6 EXPRESSION IN STING-POSITIVE TRIPLE-NEGATIVE BREAST CANCER CELLS	68
FIGURE 10 THE KNOCKDOWN OF STING SENSITIZES BREAST CANCER CELLS TO DOXORUBICIN.....	71
FIGURE 11 STING UP-REGULATES IL-6 MEDIATED PD-L1 EXPRESSION DURING DNA DAMAGE AND SUPPRESSES IMMUNE CELL DEATH	74
FIGURE 12 STAT3 INHIBITOR, HJC0152 AND DOXORUBICIN ACT SYNERGISTICALLY IN BREAST CANCER CELLS TO INHIBIT CELL DEATH	76
FIGURE 13 STING EXPRESSION POSITIVELY CORRELATES WITH IL-6 AND PD-L1 AND HIGH EXPRESSION OF STING IN CHEMOTHERAPY SHOWS THE POOR OUTCOME	78
FIGURE 14 C-DI-AMP INDUCES STING-MEDIATED IFN RESPONSE IN BREAST CANCER CELL LINES	84
FIGURE 15 C-DI-AMP BINDS TO STING DIRECTLY	86
FIGURE 16 C-DI- AMP ACTIVATES CELL DEATH IN ER-NEGATIVE BREAST CANCER CELL LINES	88
FIGURE 17 STING IS ESSENTIAL FOR C-DI-AMP INDUCED CELL DEATH.....	90
FIGURE 18 C-DI-AMP INDUCES IRF-3 MEDIATED APOPTOSIS IN STING-POSITIVE, ER-NEGATIVE BREAST CANCER CELLS	91
FIGURE 19 C-DI-AMP ACTIVATES STING-MEDIATED MITOCHONDRIAL APOPTOSIS	94
FIGURE 20 $MnCl_2$ ACTIVATES STING-MEDIATED IFN RESPONSE.....	99
FIGURE 21 cGAS AND STING ARE INDISPENSABLE FOR $MnCl_2$ -MEDIATED IFN ACTIVATION IN BREAST CANCER CELLS.....	100
FIGURE 22 $MnCl_2$ AND PACLITAXEL ACT SYNERGISTICALLY TO INDUCE CELL DEATH IN TRIPLE-NEGATIVE BREAST CANCER CELLS	102
FIGURE 23 COMBINATION OF $MnCl_2$ AND PACLITAXEL ENHANCED IMMUNOGENIC CELL DEATH OF BREAST CANCER CELLS	104
FIGURE 24 DNA DAMAGE INDUCES STING-MEDIATED IL-6-STAT3 SURVIVAL PATHWAY	110
FIGURE 25 ANALOG OF cGAMP, C-DI-AMP INDUCES CELL DEATH IN STING EXPRESSING BREAST CANCER CELL LINES.....	111
FIGURE 26 COMBINATION TREATMENT OF PACLITAXEL AND $MnCl_2$ ENHANCES ANTI-TUMOR RESPONSE VIA cGAS-STING PATHWAY	112
FIGURE 27 CONCLUSION	114