Imprime PGG, a novel innate immune therapeutic in phase 2 clinical development, induces mobilization of monocytes and focalized recruitment of innate immune cells to tumor sites

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Abstract

Immunotherapy with checkpoint inhibitors (CPIs) has been shown to be promising in clinical trials. However, a large proportion of patients do not respond to these therapies. Imprime PGG is a novel, F4/80+ macrophage activator that induces a systemic innate immune response. Immunopharmacodynamic studies with Imprime PGG in vivo showed robust cellular changes in blood and tumor biopsies that fulfilled the criteria for a robust immune response. Treatment with Imprime PGG was associated with increased tumor necrosis, increased T-cell infiltration, and increased CD11b+ myeloid cell clusters. These results are consistent with a robust immune response that induces macrophage activation and tumor destruction.

Conclusions

- Imprime PGG is a novel innate immune modifier that induces a robust immune response in vivo.
- Pretreatment with Imprime PGG prior to CPIs could improve clinical outcomes in patients with cancer.
- Imprime PGG could be a valuable addition to the immunotherapy armamentarium.

Fig 1. Imprime PGG synergizes with anti-PD-L1 antibodies to reduce B16 lung metastases

Fig 2. Immunohistochemistry IHC Analysis workflow

Fig 3. HistoFlow to analyze IHC

Fig 4. Imprime treatment results in rapid increases in Neutrophils and MHCII+ cells proximal to tumor lesions

Fig 5. Immune cell clustering Algorithm

Fig 6. Imprime synergizes with TA99 to induce immune cell clusters containing large proportion of MHCII+ cells

Fig 7. Administration of Imprime in healthy donors imparts distinct immunopharmacodynamic responses in vivo

Fig 8. Imprime increases the presence of nonclassical/intermediate monocytes in vivo

Conclusions

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- Pretreatment with Imprime PGG prior to CPIs could improve clinical outcomes in patients with cancer.
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