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**Production of Plant Derived Immune Checkpoint Inhibitors: A Comprehensive Review**

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**Abstract:** Cancer has become a serious threat to the human population. Numerous therapies are available to reduce or eliminate cancer, however these treatments have demerits too that somehow hinders the complete eradication of the problem. Immunotherapy is blooming as a new pathway to help fight cancer by directly attacking the cancerous cells. The immune checkpoint inhibitors act as blockade system and help to bring out the immune response. These monoclonal antibodies are generally produced from mammalian cells which are highly expensive and difficult to maintain. Plants can be used as a transient expression system to produce complex recombinant proteins such as monoclonal antibodies at a low cost. This review focuses on recent advancements in using these cost effective, versatile and safer sources for the production of immune checkpoint inhibitors and to check their effectiveness to combat cancer.

**Keywords:** Cancer, immune checkpoint inhibitors, immunotherapy, Nicotiana, transient expression host.