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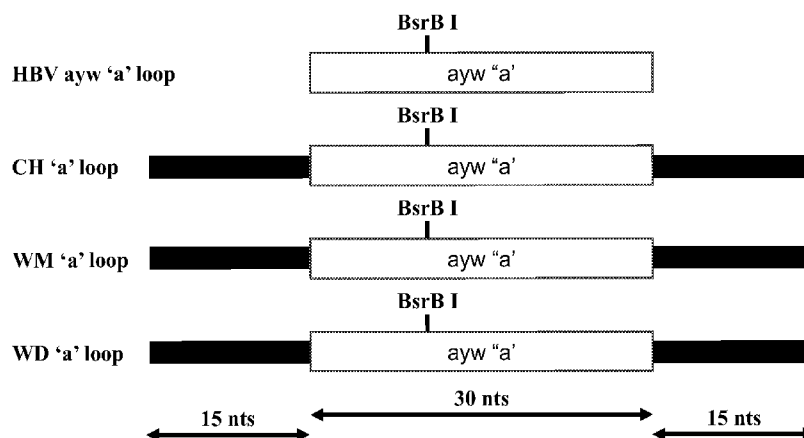


FIG. 1

(57) Abstract: This document provides methods and materials for producing immune responses against hepatitis B viruses. For example, polypeptides, nucleic acid molecules encoding such polypeptides, virus-like particles containing such polypeptides, vaccine preparations containing one or more polypeptides provided herein, vaccine preparations containing one or more nucleic acid molecules provided herein, vaccine preparations containing one or more virus-like particles provided herein, and methods for inducing immune responses against hepatitis B viruses within mammals (e.g., humans) are provided.