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The branched D-glucose residue of *S. urbana* O-polysaccharide (O-PS) was used to conjugate the O-PS to carrier protein without interfering with the backbone structure, which is identical in structure to the O-PS structure of *E. coli* O:157. The lipopolysaccharudes (LPS) of *S. urbana* was detoxified and the branched D-glucose residues in the O-PS were partially oxidized with 10 mM or 50 mM sodium metaperiodate. The derived aldehyde groups were conjugated directly or indirectly through adipic acid dihydrazide (ADH) to bovine serum albumin (BSA). The sugar and protein contents of the prepared conjugates were estimated and showed high sugar to protein ratios. The antigenic activities of the conjugates were studied by ELISA in comparison with the native LPSs of *S. urbana* and *E. coli* O:157. The conjugates showed high cross reactions with the monoclonal antibody specific against LPS of *E. coli* O:157. These indicate that the important epitopes of the O-PS antigen are not affected by the used conjugation methods. Thus, the prepared conjugates can be used for further studies as a potential protective vaccine against antigenically related pathogen.