8-Oxo-deoxyadenosine (8-Oxo-dA) is classified as an oxidized nucleotide, and is primarily used in studies of oxidative DNA damage and associated repair mechanisms. In the cell, 8-Oxo-dA DNA lesions are formed by reaction with reactive oxygen species (ROS) generated either via normal oxidative metabolic processes, UV ionizing radiation, or 2-nitropropane (an industrial solvent and component of tobacco smoke) (1). 8-Oxo-dA can potentially mispair with G, but this potential is fairly limited (2). As a single-base lesion, 8-Oxo-dA is removed by the base excision repair (BER) mechanism and the native guanine base restored (3). In the cell, 8-Oxo-dA does not appear to be strongly mutagenic (4).

References