

The present invention is directed to bi-specific monovalent diabodies that comprise two polypeptide chains and which possess at least one binding site specific for an epitope of CD3 and one binding site specific for an epitope of gpA33 (i.e., a "gpA33 x CD3 bi-specific monovalent diabody"). The present invention also is directed to bi-specific monovalent diabodies that comprise an immunoglobulin Fc Domain ("bi-specific monovalent Fc diabodies") and are composed of three polypeptide chains and which possess at least one binding site specific for an epitope of gpA33 and one binding site specific for an epitope of CD3 (i.e., a "gpA33 x CD3 bi-specific monovalent Fc diabody"). The bi-specific monovalent diabodies and bi-specific monovalent Fc diabodies of the present invention are capable of simultaneous binding to gpA33 and CD3. The invention is directed to pharmaceutical compositions that contain such bi-specific monovalent diabodies or such bi-specific monovalent Fc diabodies. The invention is additionally directed to methods for the use of such diabodies in the treatment of cancer and other diseases and conditions.