

**S5 Table. Subjects with confirmed diagnoses of multiple concurrent primary cancers in the training and testing sets (n=16)**

Subject	Cancer types present in each subject	Test result
MP-01	Anal Sac Histiocytic Sarcoma	<i>Cancer Signal Detected</i>
MP-02	Lymphoma, Indolent Lymphoma, Intermediate to Large Cell	
MP-03	Lymphoma, Intermediate to Large Cell Urinary Bladder/Urethra	
MP-04	Hemangiosarcoma Thyroid	
MP-05	Hemangiosarcoma Urinary Bladder/Urethra	
MP-06	Leukemia, Chronic Lymphoid (CLL) Mast Cell Tumor	
MP-07	Hemangiosarcoma Stomach	
MP-08	Hemangiosarcoma Soft Tissue Sarcoma	
MP-09	Anal Sac Mammary Gland Carcinoma	<i>Cancer Signal Not Detected</i>
MP-10	Malignant Melanoma Soft Tissue Sarcoma	
MP-11	Oral Cavity Urinary Bladder/Urethra	
MP-12	Mast Cell Tumor Soft Tissue Sarcoma	
MP-13	Mast Cell Tumor (Skin) Mast Cell Tumor (Subcutaneous)	
MP-14	Nasal Cavity and Paranasal Sinuses Oral Cavity	
MP-15	Anal Sac Bone, Osteosarcoma	
MP-16	Mammary Gland Carcinoma Ovary	

MP = multiple primary