Supp table 5: Review of the functions and related processes and diseases states regarding the lysosomal related genes.

| **Gene** | **Type of tumor** | **Reference** |
| --- | --- | --- |
| *ARSA* | Various\* | Van Rappard *et al.*, 2016; Kovacs *et al.*, 2019 |
| *ARSB* | Various\* | Kovacs *et al.*, 2019; Bhattacharyya *et al.*, 2017; Bhattacharyya *et al.*, 2018 |
| *ASAH1* | Various\* | Vijayan*et al.*, 2019; Lai *et al.*, 2017; Sänger *et al.*, 2015 |
| *CLN3* | Various\* | Xu *et al.*, 2019; Makoukji *et al.*, 2015; Rylova *et al.*, 2002 |
| *CTNS* | Renal Cell Carcinoma | Cameron *et al.*, 2008 |
| *CTSA* | Breast Cancer | Journet *et al.*, 2002 |
| *CTSD* | Breast Cancer | Journet *et al.*, 2002 |
| *CTSK* | Various\* | Kleer *et al.*, 2008; Shambhavi *et al.*, 2018; Liang *et al.*, 2019; Leusink *et al.*, 2018, Herroon *et al.*, 2013; Xu *et al.*, 2016 |
| *CTSS* | Breast Cancer | Journet *et al.*, 2002 |
| *CTSZ* | Breast Cancer | Journet *et al.*, 2002 |
| *FUCA1* | Various\* | Ho *et al.*, 2019; Tsuchida *et al.*, 2017; Ezawa *et al.*, 2016; Cheng *et al.*, 2015; Bonin *et al.*, 2018 |
| *GAA* | Various\* | Anji *et al.*, 2015; Zwerschke *et al.*, 2000; Zhao *et al.*, 2017; Yao-Hsien *et al.*, 2015 |
| *GALC* | Various\* | Zhao *et al.*, 2015;Beier *et al.*, 2005 |
| *GALNS* | Various\* | Ho *et al.*, 2019; Bhattacharyya *et al.*, 2017; Hamza *et al.*, 2017 |
| *GBA* | Various\* | Mistry *et al.*, 2013; Choy *et al.*, 2011; Rosenbloom *et al.*, 2005 |
| *GLA* | Various\* | Tanemura *et al.*, 2015; Thurberg *et al.*, 2016; Cybulla *et al.*, 2006 |
| *GLB1* | Various\* | Wagner *et al.*, 2015; Journet *et al.*, 2002; Brandt-Rauf *et al.*, 2006 |
| *HEXA* | Breast and Lung Cancer | Journet *et al.*, 2002; Brandt-Rauf *et al.*, 2006 |
| *HEXB* | Various\* | Journet *et al.*, 2002  Brandt-Rauf *et al.*, 2006 Brattain *et al.*, 1977; Masaki *et al.*, 1983 |
| *HYAL1* | Various\* | Witzel *et al.*, 2017; McAtee *et al.*, 2014; Tan *et al.*, 2011;  McAtee *et al.*, 2015 |
| *IDS* | Breast cancer | Singh *et al.*, 2019 |
| *IDUA* | Breast Cancer and Melanoma | Journet et al., 2002; Shin *et al.*, 2016 |
| *LAMP2* | Various\* | Morell *et al.*, 2016; Li *et al.*, 2017  Zheng *et al.*, 2018 |
| *LIPA* | Various\* | Staege *et al.*, 2010; Yan *et al.*, 2015 |
| *MAN2B1* | Breast and Gastric Cancer | Journet et al., 2002, Nakamura  *et al.*, 2009 |
| *MANBA* | Colorectal and Ovarian Cancer | Gao *et al.*, 2008; Hoogstraat *et al.*, 2014 |
| *MCOLN1* | Various\* | Hu *et al.*, 2019; Kasitinon *et al.*, 2019  Morelli *et al.*, 2016 |
| *NAGA* | Various\* | Saburi *et al.*, 2017 |
| *NAGLU* | Various\* | Krzeslak *et al.*, 2010; Coelho *et al.*, 2014 |
| *NEU1* | Various\* | Hou *et al.*, 2016; Yagi *et al.*, 2011 |
| *NPC1* | Various\* | Chen *et al.*, 2018 |
| *NPC2* | Various\* | Chen *et al.*, 2018  Liao *et al.*, 2013 |
| *PPT1* | Various\* | Rebecca *et al.*, 2019 Buono *et al.*, 2010 |
| *SUMF1* | Breast cancer | Buono *et al.*, 2010 |
| *TPP1* | Hepatocellular carcinoma | Zou *et al.*, 2018 |

\* When this lysosomal gene was present in more than two types of tumors.