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Title of Presentation	KIT Mutation Patterns in Different Demographic Populations With Systemic Mastocytosis
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Abstract of Presentation	Background Systemic mastocytosis (SM) is driven by activating KIT mutations. Detection of any activating KIT mutation satisfies a minor criterion for SM diagnosis. KIT D816V is reported as the most common KIT mutation present in SM. However, studies of KIT mutation prevalence have focused predominantly on White patients from North America and Europe. We examined whether less well-studied patient populations may exhibit different KIT mutation patterns. Methods We examined global mastocytosis populations in the literature (2001–2026), including Blueprint clinical trials, and assessed relationships between patients' race/ethnicity, sex, age, SM subtype, geography, KIT testing methods, and mutations identified. Results Approximately 5,900 unique adult-onset SM cases with KIT testing information were identified. Most SM cases were from Europe (66.8%) and North America (22.1%), with few from Asia (2.4%), Africa, and South America (<1% each). Asian patients exhibited significantly higher proportions of non-D816V activating KIT mutations (17.8%) as likely drivers of SM compared with White patients (1.5%; P<0.001). Differences in KIT mutation patterns between White and Asian patients were significant in multivariate regression analysis after accounting for age, disease subtype, sex, and testing strategy. Conclusions Our analysis identifies a higher rate of non-D816V KIT driver mutations in Asian patients with SM. However, the

	study has important limitations; prospective research in understudied populations is needed to understand whether the types of KIT mutations prevalent in SM differ across racial/ethnic groups and geographies. Our findings suggest a global need for increased awareness of SM and availability of highly sensitive mutation-agnostic KIT mutation testing.