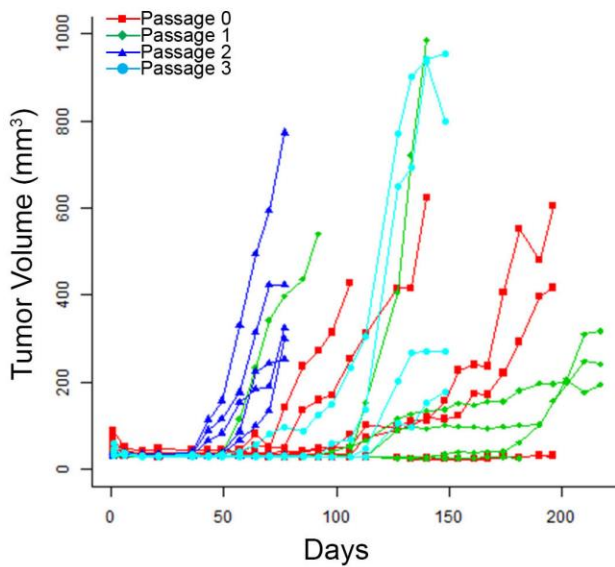


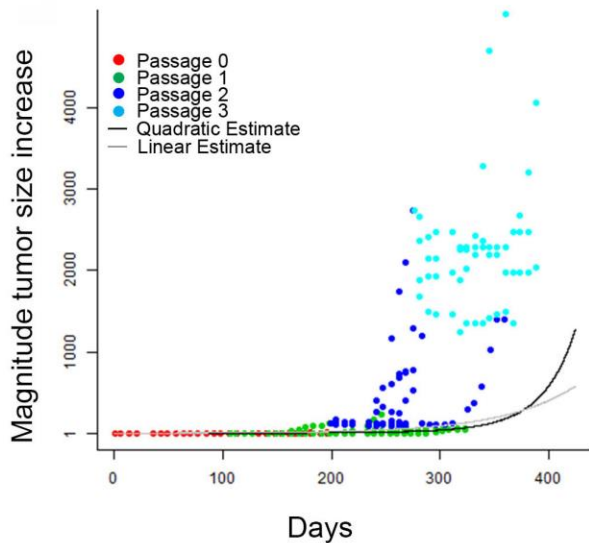
Patient-derived xenograft (PDX) tumors increase growth rate with time

Supplementary Material

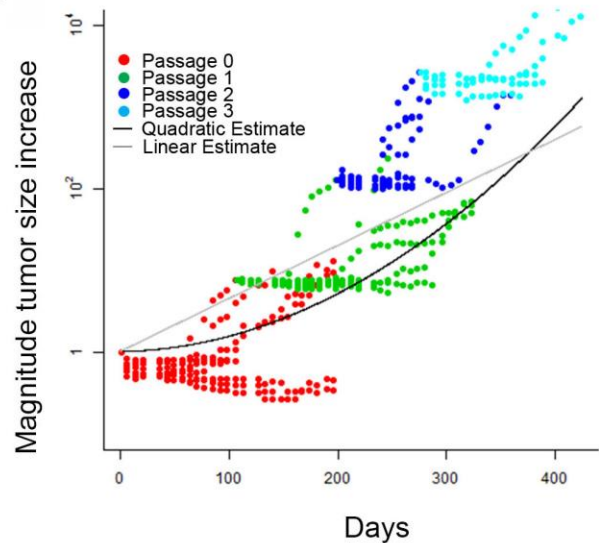
A



B



C



Supplementary Figure 1: A, PDX-SCC-M11 tumors were grown in SCID mice and tumor size data (mm³) was collected over time (days) for sequential passages (N=24). B and C, Relative tumor volume versus time for PDX-SCC-M11. Prediction lines for linear mixed models including

linear time model (grey) and quadratic time model (black) are superimposed. The data is expressed with untransformed axis (left column) and \log_{10} -axis (right column). A straight line in the right-hand graph represents a stable exponential growth rate.

Supplementary Figure 2: Patient characteristics of the PDX models evaluated here

	PDX-SCC-M0	PDX-SCC-M1	PDX-SCC-M11	UM-PDX-HACC-5
Age at diagnosis	58	72	37	45
Gender	Male	Male	Male	Female
Histologic Subtype	Squamous cell carcinoma	Squamous cell carcinoma	Squamous cell carcinoma	Salivary gland adenoid cystic carcinoma
Stage at PDX establishment	T4aN0M0 (IVa)	T2N1M0 (III)	T4N0M0 (IV)	T4aN0M0 (IVa)
Perineural Invasion	Yes	No	Unknown	Yes
Primary Site	Unknown	Oral tongue	Sinonasal	Hard palate
Site of Sample	Parotid gland	Oral tongue	Sinonasal	Hard palate
Pre-PDX Radiation	No	No	Yes	No
Pre-PDX Chemotherapy	No	No	Yes	No
Ablative Surgery	Parotidectomy and neck dissection	Hemiglossectomy and neck dissection	Skull base dissection	Maxillectomy
Post-PDX Recurrence	Yes	No	Yes	No
Deceased	No	No	Yes	No

Supplementary Figure 3: Histopathological scoring of head and neck squamous cell carcinomas adapted from the Bryne classification (24)

Score Value	1	2	3	4
Keratinization	Highly keratinized (>50% of cells)	Moderately keratinized (20-50% of cells)	Minimal keratinization (5-20% of cells)	No keratinization (0-5% of cells)
Nuclear pleomorphism	Little pleomorphism (>75% of mature cells)	Moderately abundant nuclear pleomorphism (50-75% of mature cells)	Abundant nuclear pleomorphism (25-50% of mature cells)	Extreme nuclear pleomorphism (0-25% of mature cells)
Pattern of invasion	Compressive, well delimited infiltrative edges	Infiltrative, solid cords, bands or lines	Small groups or cords of infiltrative cells (n>15)	Remarkable and widespread dissociation in small groups and/or individual cells
Inflammatory infiltration	Remarkable	Moderate	Little	Absent

Supplementary Figure 4: Genotypic analysis of DNA was extracted from unfrozen tissues of PDX models studied here

	Chromosome	Gene	Nucleic Acid Change	Amino Acid Change
PDX-SCC-M0, passage 0	14	AKT1	G→T	C138A:p.D46E
PDX-SCC-M0, Passage 5	14	AKT1	G→T	C138A:p.D46E
PDX-SCC-M1, passage 0	4 17 20	FGFR3 TP53 GNAS	C→G G→C C→T	C1149G:p.F383L C192G:p.Y64X C556T:p.R186C
PDX-SCC-M1, passage 2	4 17 20	FGFR3 TP53 GNAS	C→G G→C C→T	C1149G:p.F383L C192G:p.Y64X C556T:p.R186C

Supplementary Figure 5: Histopathological scoring of adenoid cystic carcinomas based on a classification adapted from Seethala and colleagues (26).

Histopathological Score Value	1	2	3
Pattern	Tubular	Cribriform	Solid

High Grade Transformation Score Value	1	2
Nucleoli	Tubular	Cribriform
Chromatin	Present but indistinct	Prominent
Nuclear size	Uniform size distribution	At least 2-fold nuclear variation
Cytoplasm	Scant to nearly absent	Scant to moderate
Overall pleomorphism	Low	High