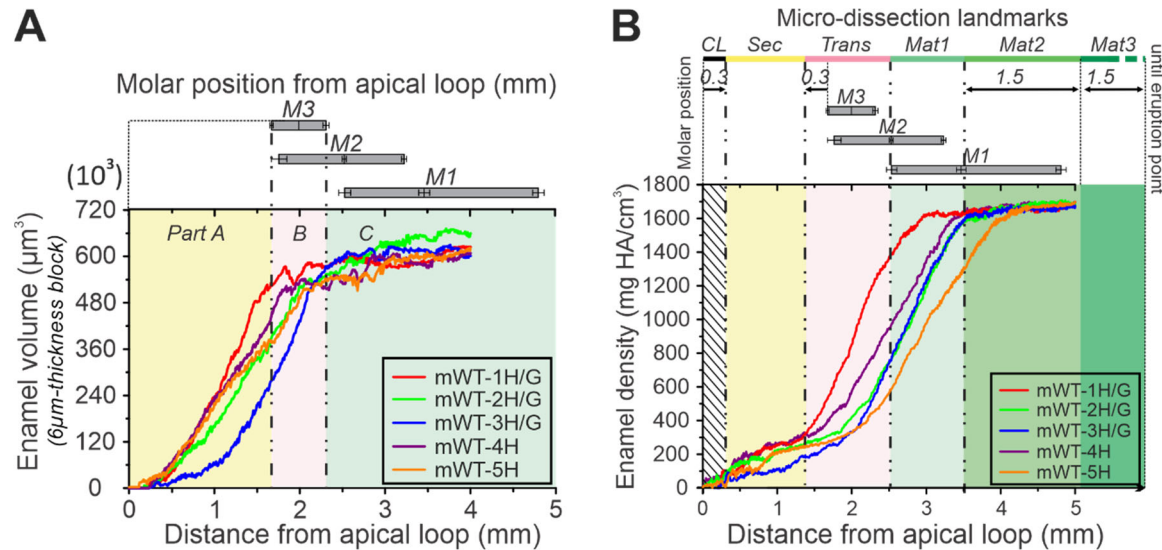


## Supplementary data:

Figure S1:



**Figure S1: Mineral profile in mandibular incisors of twelve-week-old mice.** Enamel incisors from 12-wo mice, raised with different diets, hard chows (H) or a combination of hard chows and soft gel food (H/G), were scanned with high resolution micro-CT (6  $\mu\text{m}$  pixel) and analyzed to assess (A) the enamel volume (EV) profile (in  $\mu\text{m}^3$ ) and (B) the mineral density (MD) profile (in mg HA/ $\text{cm}^3$ ) from the apex toward the tip. Molar positions, including M1, M2 and M3, were expressed as the Mean  $\pm$  SD  $\mu\text{m}$  from the apex. The scan plane was perpendicular to the incisor long axis at mid-M2 and the zone of observation (0 – ~4 to 5 mm) was limited to minimize the impact of incisor curvature on the EV calculation; sec: pure secretory, trans: mixture of small portion of late secretory, the whole transition stage and mostly very early maturation, mat1: early maturation, mat2: middle maturation, mat3: late maturation/protection, mWT: male wild-type mice, CL: cervical loop.

Table S1: List of mice used.

Mice source	mWT C57BL/6J in-bred at U. of Pittsburgh	mWT C57BL/6J ordered from Jackson lab
Fed with	Mixed hard chow and gel food	Only hard chow
<b>Mice used for micro-CT and histology staining (n=27)</b>		
<i>Step 1: Compare enamel densification profile of in-bred mice and commercial mice.</i>		
12-wo	3	2
16-wo	2	2
<i>Step 2: Analyze enamel densification profile and amelogenesis of in-bred mice.</i>		
2-wo	3	0
4-wo	5	0
8-wo	4	0
24-wo	3	0
18-mo	3	0
<b>Mice used for micro-dissection and RNA collection (n=24)</b>		
<i>Step 3: Select a mice age to perform experiment for checking chosen landmarks.</i>		
12-wo	24	
<b>Total of mice used: n=51</b>		
mWT: male wild-type; n: number of mice used; wo: week-old; mo: month-old.		

Table S2: Gene expression level of Amelx, Enam and Odam in incisal dental epithelium of 12-week-old male wild-type mice.

Gene	<i>β-actin</i>				<i>Amelx</i>				<i>Enam</i>				<i>Odam</i>			
mRNA expression level – Raw data (Cycles)																
Replicons	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<i>Sec</i>	21.78	21.52	21.70	21.84	12.09	11.10	10.78	12.82	16.93	16.83	16.90	16.92	18.46	17.92	17.87	19.06
<i>Trans</i>	21.91	21.34	21.40	21.97	15.41	14.12	14.03	14.78	19.98	20.06	20.19	18.96	15.45	15.80	15.76	15.76
<i>Mat1</i>	21.89	21.71	21.94	21.75	19.61	17.67	17.56	21.33	23.98	23.10	23.41	24.94	14.90	14.73	14.90	14.92
<i>Mat2</i>	21.91	21.69	22.06	22.21	20.75	19.45	17.69	18.59	23.58	23.25	24.47	25.02	15.01	14.99	15.19	15.22
<i>Mat3</i>	22.03	21.73	21.96	22.38	19.63	16.41	19.56	20.62	24.92	23.29	25.30	24.51	15.45	14.95	15.15	15.46
mRNA expression level - Relative ratio compared to β-actin (times)																
	N=4				Mean		SD		Mean		SD		Mean		SD	
	<i>Sec</i>				553.61		143.00		26.81		2.21		10.56		4.89	
	<i>Trans</i>				115.02		45.00		4.22		2.68		59.52		3.90	
	<i>Mat1</i>				7.88		7.60		0.28		0.13		130.30		33.95	
	<i>Mat2</i>				5.99		3.19		0.24		0.09		118.10		24.20	
	<i>Mat3</i>				7.58		6.20		0.30		0.29		116.96		9.49	
Change of gene expression during amelogenesis (secretory set as 100%)																
	<i>Sec</i>				100.00				100.00				100.00			
	<i>Trans</i>				20.78				15.74				563.64			
	<i>Mat1</i>				1.42				1.04				1233.90			
	<i>Mat2</i>				1.08				0.90				1118.37			
	<i>Mat3</i>				1.37				1.12				1107.58			