

Table 1: Genotype (gene sequence) to phenotype (physical trait) translation

	Long legs	ESR1	Drop Ears	LncRNA	Large ears	CFA12	Mustache + eyebrows	RSPO2
Beagle	No	C	Yes	T	Yes	T	No	---
Great Dane	Yes							
Irish Terrier	No							
Finnish Lapphund	No							

	ESR1	LncRNA	CFA12	RSPO2
	-----*	-----*	-----*	-----***-----
Beagle	ACGAT CCGGGT A	AGACG T TACAGC	CCAATCTAGACG T TATG	CATGCAT -- GACTAC
GreatDane	ACGATT CGGGT A	AGACGTTACAGC	CCAATCTAGACGCATG	CATGCAT---GACTAC
IrishTerrier	ACGAT CCGGGT A	AGACG T TACAGC	CCAATCTAGACGCATG	CATGCATGGGGACTAC
Finnish	ACGAT CCGGGT A	AGACG T TACAGC	CCAATCTAGACGCATG	CATGCAT---GACTAC

Table 2: Genotype of mystery dog to decode their phenotype

	Long legs	ESR1	Drop Ears	LncRNA	Large ears	CFA12	Mustache + eyebrows	RSPO2
?								

	ESR1	LncRNA	CFA12	RSPO2
	-----*	-----*	-----*	-----***-----
Beagle	ACGAT CCGGGT A	AGACG T TACAGC	CCAATCTAGACG T TATG	CATGCAT -- GACTAC
GreatDane	ACGATT CGGGT A	AGACGTTACAGC	CCAATCTAGACGCATG	CATGCAT---GACTAC
IrishTerrier	ACGAT CCGGGT A	AGACG T TACAGC	CCAATCTAGACGCATG	CATGCATGGGGACTAC
Finnish	ACGAT CCGGGT A	AGACG T TACAGC	CCAATCTAGACGCATG	CATGCAT---GACTAC
????	ACGAT CCGGGT A	AGACG T TACAGC	CCAATCTAGACGCATG	CATGCAT---GACTAC

Dogs in table 1:

Beagle



Great Dane



Finnish Lapphund



Irish Terrier



Possibilities for mystery dog in table 2:

Charlie - German Shepherd



Teddy - Yorkshire Terrier



Bea - English Cocker Spaniel



Atlas - Bernese Mountain Dog



Table 1 Key

	Long legs	ESR1	Drop Ears	LncRNA	Large ears	CFA12	Mustache + eyebrows	RSPO2
Beagle	No	C	Yes	T	Yes	T	No	---
Great Dane	Yes	T	Yes	T	No	C	No	---
Irish Terrier	No	C	No	C	No	C	Yes	GGG
Finnish Lapphund	No	C	No	C	No	C	No	---

Table 2 Key

German Shepherd	No	C	No	C	No	C	No	---
------------------------	----	---	----	---	----	---	----	-----

Table 1 Key

	Long legs	ESR1	Drop Ears	LncRNA	Large ears	CFA12	Mustache + eyebrows	RSPO2
Beagle	No	C	Yes	T	Yes	T	No	---
Great Dane	Yes	T	Yes	T	No	C	No	---
Irish Terrier	No	C	No	C	No	C	Yes	GGG
Finnish Lapphund	No	C	No	C	No	C	No	---

Table 2 Key

German Shepherd	No	C	No	C	No	C	No	---
------------------------	----	---	----	---	----	---	----	-----