



PooPrints – Match Result of DNA comparison for TD0000001

ABC Apartments, 123 Main Street Minneapolis, MN 55111 United States

At the time of matched analysis, ABC Apartments had 55 dogs comprising their known database of registered dogs. Waste samples are compared against this database with the following results:

Waste: TD0000001	Loci Match Count: 16	Notes submitted with the waste sample on 7/7/2017: collected 6/30/17 at 5:55pm Building 1 Entrance by John Doe
Dog: DN0000001	Loci Fail Count: 0	
Match Date: 07/17/17 7:02 PM	Loci Skip Count: 0	

Given this, the probability that another dog as well as DN0000001 will share the same genotype as this particular waste sample TD0000001 is One out of 250 Quintillion known as the Random Match Probability.

Waste Samples (TD numbers) and DN profiles are generated independently and without bias. BioPet uses the product rule method in determining the statistical match probability. Match probability looks at a profile frequency in a population to determine the likelihood that another genetic profile exists in addition to the one that matches. Several calculations go into determining the profile frequency. Allele frequencies, and genotype frequencies have been calculated from our sample population database of over 10,000 pure and mixed breed samples. To determine the DNA profile frequency for an individual sample, one must determine how common each allele and each allele combination (genotype) is in a given population. We calculate the frequency of the specific allele combination for each locus based on our diverse database then multiply the per loci frequencies together. The combination of the specific alleles for each of the available loci concludes the calculated frequency of this particular waste sample profile within the given population. This can also be thought of as the probability that another dog *in addition to the match identified* may display the same genetic profile.

We amplify a panel of 15 microsatellites plus 1 gender marker, to give us increased specificity with many data points. Our 15 loci, each with hundreds of allele combinations, give us an extremely high probability of producing a unique genetic ‘fingerprint’ from many sample types - buccal swab, feces, tissue, semen, etc. DNA matches must be indistinguishable and contain enough comparative loci to show distinction in a population. This distinction is built into our matching software in terms of our minimum data cutoff. A waste sample must amplify on eight or more loci to be considered unique to qualify for data comparison against the database. This means we can be confident that the generated profile is truly a unique identifier. DNA isolation, PCR, and capillary fragment analysis conducted by internally validated methods.

Below is the comparison for the matched results as taken directly from the analysis software. Here you will notice that to be resulted as a Match, the waste sample must match on every available marker.

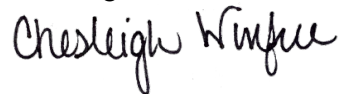
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Genotype frequencies	Gender	0.1040329	0.01530483	0.26044568	0	0.060923983	0	0.084517779	0
	Marker1	Marker2	Marker3	Marker4	Marker5	Marker6	Marker7	Marker8	Marker9
Waste: TD0059368	218 218	232 236	145 169	267 271	0 0	114 122	0 0	102 114	0 0
Dog: DN0265250	218 218	232 236	145 169	267 271	351 355	114 122	102 122	102 114	396 408
	Pass	Pass	Pass	Pass	Skip	Pass	Skip	Pass	Skip

0.032968244	0	0	0.060146449	0.10319597	0	0.25705485	Profile frequency	1.1232e-10
Marker10	Marker11	Marker12	Marker13	Marker14	Marker15	Marker16		Result: Match
224 224	0 0	0 0	288 300	187 195	0 0	89 97	Match Count: 16	
224 224	0 0	268 276	288 300	187 195	177 185	89 97	Fail Count: 0	
Pass	Skip	Skip	Pass	Pass	Skip	Pass	Skip Count: 6	

Please feel free to contact us with any additional questions.

Best Regards,



Chesleigh Winfree, M.Sc Pharm/Forensic DNA & Serology

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BioPet Laboratories demonstrates technical competency to perform molecular testing for genetic profiling of biological samples as outlined by the specification in ISO 17025:2005 international standards. BioPet exhibits compliance across sampling, sample handling and protection, testing, test reporting, record maintenance, validation of analytical methods, controlled environment, traceability, equipment calibration testing and maintenance, and qualification of personnel as outlined in BioPet Laboratories Quality and Procedures Manual.

Certificate of Analysis: Fecal DNA Isolation Testing Results Report for sample number TD0000001

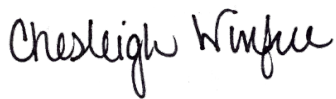
Reference Material: Suspect Fecal Material stabilized in 5ml of DNA stabilizing solution.

Sample Received by BioPet Labs: 7/14/2017
DNA Sample Completed: 7/17/2017

Analytical Verification: Testing methods utilized relating to the item listed above: laboratory developed protocols;

1. Sample Accession and DNA Isolation **EXT-F**
2. STR PCR PCR-200/PCR-101
3. STR Fragment Analysis by capillary electrophoresis **AYS-100**
4. GeneMapper Data Evaluation **AYS-200/AYS-201**
5. Data Reporting **AYS-300**
6. Sample Storage and Disposition **SS-100**

Verified by: Chesleigh Winfree



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