

# GENE-SWitCH

The regulatory GENomE of SWine and CHicken: functional annotation during development

<p><b>Deliverable D1.3</b> <b>Raw sequences of RNA-seq delivered to ENA and FAANG</b></p>
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**Dissemination level:**

<b>PU</b> Public	<b>x</b>
<b>CO</b> Confidential, only for members of the consortium (including the Commission Services)	

Research and Innovation Action, SFS-30-2018-2019-2020 Agri-Aqua Labs  
Duration of the project: 01 July 2019 – 30 June 2023, 48 months



## History of changes

VERSION	Date	Changes
1.0	31/03/2020	First submission at M21
2.0	30/06/2021	Revised version to answer the comments of the rejection letter received on 1/06/2021

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# 1 Summary

## **Objective:**

The first Work Package of GENE-SWitCH (WP1) is dedicated to the production of a collection of samples covering the target tissues of the project and then to the realization of the set of molecular assays (RNA-seq, ChIP-seq, ATAC-seq, RRBS, WGBS, Capture Hi-C) on these samples.

The aim of WP1 is to establish a collection of cryopreserved tissues representing three developmental stages in pig and chicken. Core molecular assays required for the functional annotation of these genomes will be performed on a set of seven target tissues obtained for the three developmental stages. The main objectives that UEDIN was responsible for during this period have been:

To realize a collection of samples with associated metadata describing accurately the samples and the sampling process (Task 1.2).

To realize part of the planned molecular assays ie. produce RNA-seq and smallRNAseq data for all samples (Task 1.3).

## **Methods:**

The tasks 1.1 and 1.2 of WP1 consist in carrying out a collection of samples corresponding to the (7) selected tissues and (3) developmental stages, with associated metadata describing accurately the samples and the sampling process. The seven selected tissues are: cerebellum/hindbrain, lung, kidney, dorsal skin, small intestine/ileum, liver and skeletal muscle from the hindlimb. The three developmental stages are: early fetal/embryonic organogenesis, late fetal/embryonic organogenesis, new-born. For each species, each developmental stage and each tissue, 4 biological replicates (2 males and 2 females) were sampled.

The required pig RNA samples were prepared by INRAE and sent to UEDIN in Task 1.1. The chicken RNA samples were prepared by UEDIN in Task 1.2. Protocols for RNA extractions have been uploaded to the FAANG Data Coordination Center (DCC) and are publicly available.

## **Main results:**

All 168 RNAs (84 pig and 84 chicken) were diluted to the required concentration of 50 ng/ul (2500 ng/sample). Two aliquots from the 84 RNA samples from each species were prepared for total RNA-seq and small RNA-seq assays and sent on dry ice to Genewiz in Sussex (UK)



for further transition to Genewiz (New Jersey, USA) for sequencing. The RNA-seq was designed to provide ~100M paired-end reads (2x150bp) per sample and the small RNAseq ~35M paired-end reads (150bp) per sample. Sequence data were provided Nov 2020. Fastq files and metadata have been uploaded to the FAANG DCC and European Nucleotide Archive.

**Teams involved:**

UEDIN, INRAE



## 2 Introduction

Regarding this deliverable, the tasks for UEDIN in T1.2 and INRAE in T1.1 include extracting genomic DNA and total RNA from the chicken and pig samples respectively.

The tasks for UEDIN in T1.3 include (1) taking receipt (from INRAE) of RNA from pig samples described in Task 1.1; (2) sending RNA to subcontractors for RNAseq/smallRNAseq sequencing. After completing a full tendering process, sequencing providers identified were Genewiz (New Jersey, USA) for RNAseq/smallRNAseq.

## 3 Results

### 3.1 Result 1 Task 1.1 and Task1.2: RNA extraction

We successfully sampled all the tissues and performed RNA extractions necessary to perform the molecular assays described in the DoA and corresponding to Tasks 1.4.

Protocols are publicly available on the FAANG DCC:

[https://data.faang.org/api/fire\\_api/assays/INRA\\_SOP\\_GENESWITCH\\_WP1\\_PIG\\_EXTRACTI\\_ON\\_DNA\\_RNA\\_20201111.pdf](https://data.faang.org/api/fire_api/assays/INRA_SOP_GENESWITCH_WP1_PIG_EXTRACTI_ON_DNA_RNA_20201111.pdf)

[https://data.faang.org/api/fire\\_api/assays/ROSLIN\\_SOP\\_GENESWITCH\\_WP1\\_CHICK\\_EXT\\_RACTION\\_DNA\\_RNA\\_20201111.pdf](https://data.faang.org/api/fire_api/assays/ROSLIN_SOP_GENESWITCH_WP1_CHICK_EXT_RACTION_DNA_RNA_20201111.pdf)

### 3.2 Result 2 Task 1.4: RNA-sequencing

RNA-sequencing and small RNA-seq have been completed. Sequencing was completed in November 2020. Quality control was carried out by the suppliers to confirm that sequencing data meet the quality criteria set by the tendering process. Fastq files and metadata have been uploaded to the FAANG DCC and European Nucleotide Archive in December 2020.

Sequencing statistics:

Chicken mRNA-seq

Sample ID	# Reads	Yield (Mbases)	Mean Quality Score	% Bases >= 30
GGA-UEDIN-GW-WP1-cerebellum-E15-1	290 525 617	66721	35,95	93,91
GGA-UEDIN-GW-WP1-cerebellum-E15-2	97 802 740	59385	35,93	93,82
GGA-UEDIN-GW-WP1-cerebellum-E15-3	140 240 280	49026	35,94	93,86
GGA-UEDIN-GW-WP1-cerebellum-E15-4	109 118 875	67193	35,95	93,93
GGA-UEDIN-GW-WP1-cerebellum-HC-1	96 175 384	61900	35,9	93,68
GGA-UEDIN-GW-WP1-cerebellum-HC-2	80 276 941	24254	35,91	93,76
GGA-UEDIN-GW-WP1-cerebellum-HC-3	80 847 017	30709	35,93	93,83
GGA-UEDIN-GW-WP1-cerebellum-HC-4	124 265 393	27263	35,9	93,66
GGA-UEDIN-GW-WP1-hindbrain-E8-POOL1	106 505 994	35971	35,93	93,81



GGA-UEDIN-GW-WP1-hindbrain-E8-POOL2	111 863 363	36584	37,76	93,35
GGA-UEDIN-GW-WP1-hindbrain-E8-POOL3	212 597 249	33294	35,91	93,71
GGA-UEDIN-GW-WP1-hindbrain-E8-POOL4	90 006 365	27002	35,95	93,93
GGA-UEDIN-GW-WP1-hindlimb-muscle-E15-1	117 171 870	24084	35,93	93,82
GGA-UEDIN-GW-WP1-hindlimb-muscle-E15-2	164 079 902	35151	35,97	94,01
GGA-UEDIN-GW-WP1-hindlimb-muscle-E15-3	107 094 699	59517	35,94	93,88
GGA-UEDIN-GW-WP1-hindlimb-muscle-E15-4	119 902 446	33672	35,91	93,72
GGA-UEDIN-GW-WP1-hindlimb-muscle-E8-POOL1	93 293 075	25870	35,9	93,65
GGA-UEDIN-GW-WP1-hindlimb-muscle-E8-POOL2	94 257 543	30121	35,92	93,79
GGA-UEDIN-GW-WP1-hindlimb-muscle-E8-POOL3	102 361 738	32736	36,96	93,59
GGA-UEDIN-GW-WP1-hindlimb-muscle-E8-POOL4	109 679 679	32128	35,9	93,67
GGA-UEDIN-GW-WP1-hindlimb-muscle-HC-1	177 958 426	26643	35,93	93,82
GGA-UEDIN-GW-WP1-hindlimb-muscle-HC-2	121 949 789	59879	35,97	94,07
GGA-UEDIN-GW-WP1-hindlimb-muscle-HC-3	99 474 355	86320	35,92	93,78
GGA-UEDIN-GW-WP1-hindlimb-muscle-HC-4	111 641 745	73041	35,89	93,63
GGA-UEDIN-GW-WP1-kidney-E15-1	215 555 092	33630	37,08	93,72
GGA-UEDIN-GW-WP1-kidney-E15-2	114 478 241	31006	36	94,2
GGA-UEDIN-GW-WP1-kidney-E15-3	106 495 087	33117	35,96	93,97
GGA-UEDIN-GW-WP1-kidney-E15-4	81 538 585	32164	36,76	93,74
GGA-UEDIN-GW-WP1-kidney-E8-POOL1	287 731 013	30665	35,94	93,9
GGA-UEDIN-GW-WP1-kidney-E8-POOL2	315 485 817	24791	35,96	94
GGA-UEDIN-GW-WP1-kidney-E8-POOL3	88 809 232	31808	36,62	93,59
GGA-UEDIN-GW-WP1-kidney-E8-POOL4	110 963 507	24842	35,93	93,81
GGA-UEDIN-GW-WP1-kidney-HC-1	243 473 250	49224	35,96	93,96
GGA-UEDIN-GW-WP1-kidney-HC-2	136 266 409	56152	35,92	93,79
GGA-UEDIN-GW-WP1-kidney-HC-3	197 949 742	53388	35,94	93,89
GGA-UEDIN-GW-WP1-kidney-HC-4	222 407 265	28278	35,93	93,85
GGA-UEDIN-GW-WP1-liver-E15-1	299 319 754	34552	37,16	93,9
GGA-UEDIN-GW-WP1-liver-E15-2	90 149 733	34597	36,05	94,43
GGA-UEDIN-GW-WP1-liver-E15-3	199 595 800	25613	36,02	94,29
GGA-UEDIN-GW-WP1-liver-E15-4	115 324 904	24462	36,05	94,41
GGA-UEDIN-GW-WP1-Liver-E8-POOL1	236 613 679	32135	36,86	93,94
GGA-UEDIN-GW-WP1-Liver-E8-POOL2	499 329 808	31893	36,81	93,89
GGA-UEDIN-GW-WP1-Liver-E8-POOL3	103 352 204	33289	37,06	93,86
GGA-UEDIN-GW-WP1-Liver-E8-POOL4	142 376 453	33493	35,96	93,95
GGA-UEDIN-GW-WP1-liver-HC-1	107 119 747	31951	35,94	93,84
GGA-UEDIN-GW-WP1-liver-HC-2	82 636 858	94646	35,96	93,96
GGA-UEDIN-GW-WP1-liver-HC-3	110 976 368	149800	35,94	93,89
GGA-UEDIN-GW-WP1-liver-HC-4	187 175 237	42713	35,96	94,02
GGA-UEDIN-GW-WP1-lung-E15-1	187 734 476	69905	35,94	93,88
GGA-UEDIN-GW-WP1-lung-E15-2	106 308 453	70983	35,89	93,64
GGA-UEDIN-GW-WP1-lung-E15-3	98 763 897	46507	35,92	93,76
GGA-UEDIN-GW-WP1-lung-E15-4	168 677 095	86849	35,97	94,04
GGA-UEDIN-GW-WP1-lung-E8-POOL1	163 419 198	29843	35,94	93,9
GGA-UEDIN-GW-WP1-lung-E8-POOL2	86 232 831	40893	35,92	93,82
GGA-UEDIN-GW-WP1-lung-E8-POOL3	106 027 431	69760	35,95	93,93
GGA-UEDIN-GW-WP1-lung-E8-POOL4	100 406 116	37470	35,97	94,05



GGA-UEDIN-GW-WP1-lung-HC-1	233 015 925	79273	35,94	93,91
GGA-UEDIN-GW-WP1-lung-HC-2	206 333 611	27988	35,91	93,73
GGA-UEDIN-GW-WP1-lung-HC-3	90 875 900	30000	35,94	93,94
GGA-UEDIN-GW-WP1-lung-HC-4	112 589 933	40880	35,96	93,99
GGA-UEDIN-GW-WP1-skin-E15-1	264 244 992	33559	37,02	93,57
GGA-UEDIN-GW-WP1-skin-E15-2	223 974 604	33374	35,96	94
GGA-UEDIN-GW-WP1-skin-E15-3	429 404 337	121424	35,9	93,73
GGA-UEDIN-GW-WP1-skin-E15-4	112 102 456	29341	35,91	93,75
GGA-UEDIN-GW-WP1-skin-E8-POOL1	99 998 363	56321	35,93	93,83
GGA-UEDIN-GW-WP1-skin-E8-POOL2	136 307 620	29629	35,93	93,88
GGA-UEDIN-GW-WP1-skin-E8-POOL3	82 807 108	27044	35,91	93,74
GGA-UEDIN-GW-WP1-skin-E8-POOL4	112 239 456	87157	35,92	93,78
GGA-UEDIN-GW-WP1-skin-HC-1	107 212 867	25929	35,88	93,59
GGA-UEDIN-GW-WP1-skin-HC-2	110 393 169	31949	35,87	93,54
GGA-UEDIN-GW-WP1-skin-HC-3	106 198 255	37281	35,85	93,42
GGA-UEDIN-GW-WP1-skin-HC-4	289 493 281	34343	35,91	93,75
GGA-UEDIN-GW-WP1-small-intestine-E15-1	232 534 735	89796	35,93	93,85
GGA-UEDIN-GW-WP1-small-intestine-E15-2	115 173 325	63779	35,93	93,82
GGA-UEDIN-GW-WP1-small-intestine-E15-3	124 899 161	31860	36,69	93,75
GGA-UEDIN-GW-WP1-small-intestine-E15-4	198 388 876	64666	35,97	94,06
GGA-UEDIN-GW-WP1-small-intestine-E8-POOL1	155 025 200	43923	35,91	93,73
GGA-UEDIN-GW-WP1-small-intestine-E8-POOL2	86 428 538	28852	35,87	93,53
GGA-UEDIN-GW-WP1-small-intestine-E8-POOL3	146 408 281	42072	35,9	93,64
GGA-UEDIN-GW-WP1-small-intestine-E8-POOL4	111 246 504	50604	35,93	93,83
GGA-UEDIN-GW-WP1-small-intestine-HC-1	101 674 233	128821	35,92	93,78
GGA-UEDIN-GW-WP1-small-intestine-HC-2	404 746 556	33777	35,91	93,73
GGA-UEDIN-GW-WP1-small-intestine-HC-3	102 216 162	32904	35,95	93,94
GGA-UEDIN-GW-WP1-small-intestine-HC-4	85 379 096	30503	35,89	93,6
mean	153 013 051	45 904	36,07	93,83

## Pig mRNA-seq

Sample ID	# Reads	Yield (Mbases)	Mean Quality Score	% Bases >= 30
SSR-INRA-GS-WP1-Liver-NB-F-3	140 748 578	42225	36,23	95,43
SSR-INRA-GS-WP1-liver-FT-70dpf-3	181 896 204	54568	36,22	95,42
SSR-INRA-GS-WP1-kidney-NB-F-3	157 501 983	47251	36,15	95,01
SSR-INRA-GS-WP1-Kidney-FT-70dpf-2	125 013 606	37503	36,88	94,79
SSR-INRA-GS-WP1-Lung-FT-30dpf-POOL-1	174 784 289	52435	36,14	94,96
SSR-INRA-GS-WP1-gluteus-medius-NB-F-4	179 577 274	53873	36,2	95,29
SSR-INRA-GS-WP1-Back-skin-FT-70dpf-3	170 618 802	51185	36,15	95,02
SSR-INRA-GS-WP1-Kidney-FT-70dpf-3	127 487 857	38245	36,16	95,05
SSR-INRA-GS-WP1-Lung-NB-F-3	195 037 338	58511	36,17	95,16
SSR-INRA-GS-WP1-Lung-FT-30dpf-POOL-2	180 512 547	54153	36,15	95,02
SSR-INRA-GS-WP1-kidney-NB-F-4	142 447 431	42735	36,15	94,99



SSR-INRA-GS-WP1-Back-skin-FT-70dpf-2	200 819 802	60246	36,14	94,99
SSR-INRA-GS-WP1-Hindbrain-FT-30dpf-POOL-6	116 592 554	34978	36,16	95,04
SSR-INRA-GS-WP1-kidney-NB-M-1	120 399 852	36120	36,13	94,9
SSR-INRA-GS-WP1-hindlimb-muscle-FT-70dpf-4	128 822 173	38647	36,17	95,11
SSR-INRA-GS-WP1-Back-skin-FT-70dpf-4	170 130 878	51039	36,16	95,06
SSR-INRA-GS-WP1-Liver-FT-30dpf-POOL-2	152 608 009	45784	36,22	95,41
SSR-INRA-GS-WP1-Hindbrain-FT-30dpf-POOL-1	158 783 229	47636	36,16	95,06
SSR-INRA-GS-WP1-small-intestine-FT-70dpf-2	120 500 024	36150	36,18	95,16
SSR-INRA-GS-WP1-kidney-NB-M-2	153 849 821	46155	36,14	94,94
SSR-INRA-GS-WP1-Small-Intestine-FT-30dpf-POOL-1	219 737 960	65921	36,17	95,13
SSR-INRA-GS-WP1-Cerebellum-FT-70dpf-1	133 235 118	39971	36,97	94,48
SSR-INRA-GS-WP1-Kidney-FT-30dpf-POOL-3	142 303 606	42692	36,18	95,13
SSR-INRA-GS-WP1-Liver-NB-F-4	186 500 856	55950	36,22	95,4
SSR-INRA-GS-WP1-Lung-FT-70dpf-1	195 893 436	58768	36,17	95,15
SSR-INRA-GS-WP1-hindlimb-muscle-FT-70dpf-3	100 743 529	30223	36,17	95,1
SSR-INRA-GS-WP1-Lung-FT-70dpf-2	217 305 254	65192	36,15	95
SSR-INRA-GS-WP1-Small-Intestine-FT-30dpf-POOL-6	285 611 388	85684	36,14	95
SSR-INRA-GS-WP1-small-intestine-FT-70dpf-1	118 321 636	35497	36,17	95,08
SSR-INRA-GS-WP1-cerebellum-NB-F-4	169 874 870	50963	36,12	94,87
SSR-INRA-GS-WP1-Kidney-FT-30dpf-POOL-2	109 806 018	32942	36,16	95
SSR-INRA-GS-WP1-Lung-NB-M-2	126 126 260	37838	36,87	94,65
SSR-INRA-GS-WP1-liver-FT-70dpf-4	262 950 611	78885	36,26	95,58
SSR-INRA-GS-WP1-Liver-FT-30dpf-POOL-1	161 750 679	48524	36,21	95,38
SSR-INRA-GS-WP1-gluteus-medius-NB-M-1	204 206 296	61263	36,2	95,27
SSR-INRA-GS-WP1-Lung-FT-70dpf-4	195 204 331	58561	36,19	95,2
SSR-INRA-GS-WP1-Hindbrain-FT-30dpf-POOL-3	177 227 651	53169	36,17	95,08
SSR-INRA-GS-WP1-Skin-FT-30dpf-POOL-1	155 690 061	46708	36,18	95,19
SSR-INRA-GS-WP1-Kidney-FT-70dpf-4	131 398 986	39420	37,07	94,72
SSR-INRA-GS-WP1-Hindbrain-FT-30dpf-POOL-2	135 769 117	40732	36,16	95,09
SSR-INRA-GS-WP1-back-skin-NB-M-1	129 352 742	38806	36,14	94,98
SSR-INRA-GS-WP1-Liver-FT-30dpf-POOL-6	155 997 513	46799	36,23	95,48
SSR-INRA-GS-WP1-Skin-FT-30dpf-POOL-2	152 468 915	45741	36,17	95,09
SSR-INRA-GS-WP1-Hindlimb-muscle-FT-30dpf-POOL-3	146 165 996	43849	36,17	95,12
SSR-INRA-GS-WP1-liver-FT-70dpf-2	140 625 840	42188	36,23	95,41
SSR-INRA-GS-WP1-gluteus-medius-NB-F-3	156 962 194	47090	36,2	95,28
SSR-INRA-GS-WP1-Kidney-FT-30dpf-POOL-1	205 296 427	61589	36,19	95,2
SSR-INRA-GS-WP1-Ileum-NB-F-4	172 194 783	51659	36,2	95,26
SSR-INRA-GS-WP1-small-intestine-FT-70dpf-4	121 753 744	36525	36,93	94,84
SSR-INRA-GS-WP1-Hindlimb-muscle-FT-30dpf-POOL-1	177 501 811	53251	36,16	95,05
SSR-INRA-GS-WP1-gluteus-medius-NB-M-2	129 078 916	38724	36,17	95,16
SSR-INRA-GS-WP1-back-skin-NB-M-2	168 876 664	50664	36,12	94,94
SSR-INRA-GS-WP1-back-skin-NB-F-4	159 085 007	47724	36,11	94,85
SSR-INRA-GS-WP1-Cerebellum-FT-70dpf-3	100 027 276	30008	36,15	94,97
SSR-INRA-GS-WP1-Back-skin-FT-70dpf-1	122 544 135	36764	36,76	94,82
SSR-INRA-GS-WP1-Liver-NB-M-2	153 904 618	46171	36,22	95,4
SSR-INRA-GS-WP1-Ileum-NB-M-2	101 724 423	30517	36,15	95
SSR-INRA-GS-WP1-Liver-FT-30dpf-POOL-3	142 642 926	42792	36,21	95,38





SSR-INRA-GS-WP1-cerebellum-NB-M-2	101 092 873	30328	36,12	94,89
SSR-INRA-GS-WP1-cerebellum-NB-M-1	120 215 793	36065	36,14	94,96
SSR-INRA-GS-WP1-Lung-NB-M-1	146 012 208	43803	36,19	95,22
SSR-INRA-GS-WP1-back-skin-NB-F-3	129 807 903	38944	37,13	94,81
SSR-INRA-GS-WP1-hindlimb-muscle-FT-70dpf-1	101 831 766	30550	36,19	95,2
SSR-INRA-GS-WP1-Skin-FT-30dpf-POOL-3	151 605 415	45481	36,16	95,09
SSR-INRA-GS-WP1-Kidney-FT-70dpf-1	116 260 494	34877	36,11	94,79
SSR-INRA-GS-WP1-small-intestine-FT-70dpf-3	132 493 532	39748	36,19	95,21
SSR-INRA-GS-WP1-Ileum-NB-F-3	112 020 378	33606	36,16	95,05
SSR-INRA-GS-WP1-Ileum-NB-M-1	108 761 125	32629	36,18	95,18
SSR-INRA-GS-WP1-Cerebellum-FT-70dpf-4	125 996 943	37799	36,97	94,58
SSR-INRA-GS-WP1-Kidney-FT-30dpf-POOL-6	226 562 211	67969	36,19	95,2
SSR-INRA-GS-WP1-Small-Intestine-FT-30dpf-POOL-2	169 504 889	50851	36,13	94,95
SSR-INRA-GS-WP1-Hindlimb-muscle-FT-30dpf-POOL-6	111 665 365	33499	36,13	94,9
SSR-INRA-GS-WP1-liver-FT-70dpf-1	146 921 741	44077	36,26	95,6
SSR-INRA-GS-WP1-Hindlimb-muscle-FT-30dpf-POOL-2	148 559 553	44568	36,15	95,02
SSR-INRA-GS-WP1-Skin-FT-30dpf-POOL-6	248 102 289	74430	36,19	95,2
SSR-INRA-GS-WP1-Lung-FT-30dpf-POOL-3	156 309 904	46893	36,16	95,05
SSR-INRA-GS-WP1-Liver-NB-M-1	114 149 091	34245	36,21	95,34
SSR-INRA-GS-WP1-hindlimb-muscle-FT-70dpf-2	121 867 634	36560	36,16	95,07
SSR-INRA-GS-WP1-Lung-NB-F-4	184 083 831	55225	36,17	95,16
SSR-INRA-GS-WP1-Small-Intestine-FT-30dpf-POOL-3	176 422 969	52926	36,13	94,93
SSR-INRA-GS-WP1-Cerebellum-FT-70dpf-2	102 292 040	30688	36,15	95
SSR-INRA-GS-WP1-Lung-FT-70dpf-3	186 791 344	56038	36,16	95,08
SSR-INRA-GS-WP1-Lung-FT-30dpf-POOL-6	169 083 504	50725	36,15	94,98
SSR-INRA-GS-WP1-cerebellum-NB-F-3	123 960 308	37189	36,83	94,58
mean	153 528 202	46 059	36	95

### Chicken smallRNA-seq

Sample ID	# Reads	Yield (Mbases)	Mean Quality Score	% Bases >= 30
GGA-UEDIN-GW-WP1-liver-E15-2	69 976 797	21133	31,47	73,86
GGA-UEDIN-GW-WP1-liver-HC-4	57 415 684	17340	31,66	75,12
GGA-UEDIN-GW-WP1-lung-HC-3	86 444 078	26106	31,51	74,25
GGA-UEDIN-GW-WP1-kidney-E8-POOL3	69 394 922	20957	31,93	76,3
GGA-UEDIN-GW-WP1-cerebellum-E15-1	57 562 636	17384	31,78	75,64
GGA-UEDIN-GW-WP1-liver-HC-1	58 552 642	17683	31,55	74,53
GGA-UEDIN-GW-WP1-small-intestine-HC-3	116 672 134	35235	31,55	74,28
GGA-UEDIN-GW-WP1-small-intestine-HC-4	59 159 911	17866	31,75	75,61
GGA-UEDIN-GW-WP1-Liver-E8-POOL2	64 863 026	19589	31,82	75,7
GGA-UEDIN-GW-WP1-lung-HC-2	60 686 144	18327	31,74	75,52
GGA-UEDIN-GW-WP1-skin-HC-1	70 151 863	21186	31,69	75,36
GGA-UEDIN-GW-WP1-cerebellum-HC-2	72 756 605	21972	31,86	76,07
GGA-UEDIN-GW-WP1-skin-E8-POOL2	52 521 926	15862	32	76,66
GGA-UEDIN-GW-WP1-cerebellum-HC-4	52 432 831	15835	31,72	75,28



GGA-UEDIN-GW-WP1-hindlimb-muscle-E15-4	58 739 119	17739	31,18	72,72
GGA-UEDIN-GW-WP1-hindbrain-E8-POOL4	86 135 069	26013	31,87	75,95
GGA-UEDIN-GW-WP1-Liver-E8-POOL4	54 255 339	16385	31,26	72,92
GGA-UEDIN-GW-WP1-hindbrain-E8-POOL2	60 509 193	18274	31,91	76,14
GGA-UEDIN-GW-WP1-skin-HC-3	56 817 871	17159	31,74	75,57
GGA-UEDIN-GW-WP1-lung-HC-4	61 936 817	18705	31,76	75,55
GGA-UEDIN-GW-WP1-skin-E15-1	64 175 977	19381	30,96	71,94
GGA-UEDIN-GW-WP1-liver-E15-1	99 993 553	30198	31,69	75,06
GGA-UEDIN-GW-WP1-lung-E8-POOL4	59 209 144	17881	31,95	76,38
GGA-UEDIN-GW-WP1-skin-E15-3	77 212 980	23318	31,8	75,91
GGA-UEDIN-GW-WP1-hindbrain-E8-POOL1	54 133 337	16348	32,07	76,95
GGA-UEDIN-GW-WP1-skin-HC-4	72 182 268	21799	30,62	70,63
GGA-UEDIN-GW-WP1-kidney-HC-3	64 983 712	19625	31,88	76,21
GGA-UEDIN-GW-WP1-small-intestine-HC-1	66 875 383	20196	31,72	75,42
GGA-UEDIN-GW-WP1-cerebellum-E15-2	69 485 296	20985	31,78	75,64
GGA-UEDIN-GW-WP1-hindlimb-muscle-HC-3	60 281 538	18205	31,77	75,64
GGA-UEDIN-GW-WP1-lung-E15-2	67 508 295	20388	31,88	76,14
GGA-UEDIN-GW-WP1-liver-E15-4	88 454 169	26713	31,41	73,57
GGA-UEDIN-GW-WP1-small-intestine-E8-POOL2	78 964 348	23847	31,94	76,38
GGA-UEDIN-GW-WP1-kidney-HC-4	80 381 901	24275	31,67	75,11
GGA-UEDIN-GW-WP1-Liver-E8-POOL3	57 239 586	17286	31,81	75,62
GGA-UEDIN-GW-WP1-kidney-E15-4	80 227 903	24229	31,95	76,48
GGA-UEDIN-GW-WP1-liver-HC-2	30 402 701	9182	31,37	73,62
GGA-UEDIN-GW-WP1-skin-E15-4	59 518 567	17975	31,72	75,42
GGA-UEDIN-GW-WP1-small-intestine-E15-1	81 783 285	24699	31,98	76,52
GGA-UEDIN-GW-WP1-lung-E15-1	65 640 930	19824	31,5	74,28
GGA-UEDIN-GW-WP1-hindlimb-muscle-E8-POOL3	64 116 574	19363	31,83	75,76
GGA-UEDIN-GW-WP1-small-intestine-E8-POOL3	51 504 147	15554	31,93	76,29
GGA-UEDIN-GW-WP1-cerebellum-E15-3	64 414 590	19453	31,8	75,75
GGA-UEDIN-GW-WP1-hindlimb-muscle-HC-4	93 721 882	28304	31,67	75,07
GGA-UEDIN-GW-WP1-Liver-E8-POOL1	58 622 749	17704	31,51	74,12
GGA-UEDIN-GW-WP1-kidney-E8-POOL1	57 094 950	17243	31,92	76,29
GGA-UEDIN-GW-WP1-liver-HC-3	58 445 331	17650	31,65	75,03
GGA-UEDIN-GW-WP1-hindlimb-muscle-E8-POOL1	36 924 886	11151	31,64	74,83
GGA-UEDIN-GW-WP1-lung-E15-4	83 843 434	25321	31,92	76,34
GGA-UEDIN-GW-WP1-liver-E15-3	50 939 934	15384	31,57	74,42
GGA-UEDIN-GW-WP1-skin-E8-POOL3	91 624 749	27671	31,78	75,56
GGA-UEDIN-GW-WP1-lung-E8-POOL2	56 265 092	16992	32,03	76,8
GGA-UEDIN-GW-WP1-small-intestine-E15-4	82 587 203	24941	31,96	76,48
GGA-UEDIN-GW-WP1-lung-HC-1	67 723 434	20452	31,81	75,92
GGA-UEDIN-GW-WP1-cerebellum-HC-1	63 421 149	19153	31,85	75,98
GGA-UEDIN-GW-WP1-lung-E8-POOL1	61 391 007	18540	31,21	72,94
GGA-UEDIN-GW-WP1-kidney-E15-3	78 902 784	23829	32,09	77,13
GGA-UEDIN-GW-WP1-small-intestine-E8-POOL1	66 567 166	20103	32,08	77,14
GGA-UEDIN-GW-WP1-kidney-HC-2	75 921 235	22928	31,84	76,03
GGA-UEDIN-GW-WP1-kidney-E15-1	75 589 645	22828	31,88	76,11
GGA-UEDIN-GW-WP1-skin-E8-POOL4	83 334 727	25167	32	76,65



GGA-UEDIN-GW-WP1-hindlimb-muscle-HC-2	66 693 536	20141	31,69	75,15
GGA-UEDIN-GW-WP1-lung-E8-POOL3	50 805 869	15343	31,89	76,11
GGA-UEDIN-GW-WP1-small-intestine-E15-3	88 730 949	26797	31,88	75,99
GGA-UEDIN-GW-WP1-hindlimb-muscle-E15-1	60 465 192	18260	31,78	75,65
GGA-UEDIN-GW-WP1-hindlimb-muscle-E8-POOL4	65 072 095	19652	31,89	76,14
GGA-UEDIN-GW-WP1-skin-E8-POOL1	67 727 039	20454	31,94	76,38
GGA-UEDIN-GW-WP1-hindbrain-E8-POOL3	85 628 689	25860	31,95	76,4
GGA-UEDIN-GW-WP1-kidney-HC-1	81 293 798	24551	31,7	75,32
GGA-UEDIN-GW-WP1-hindlimb-muscle-HC-1	117 539 211	35497	31,78	75,68
GGA-UEDIN-GW-WP1-skin-E15-2	71 339 317	21544	31,81	75,91
GGA-UEDIN-GW-WP1-hindlimb-muscle-E8-POOL2	78 646 590	23751	31,92	76,19
GGA-UEDIN-GW-WP1-kidney-E8-POOL4	59 992 232	18118	31,88	76,04
GGA-UEDIN-GW-WP1-small-intestine-E8-POOL4	64 274 183	19411	31,41	73,78
GGA-UEDIN-GW-WP1-cerebellum-HC-3	56 493 536	17061	31,82	75,89
GGA-UEDIN-GW-WP1-hindlimb-muscle-E15-3	63 585 148	19203	31,75	75,59
GGA-UEDIN-GW-WP1-kidney-E8-POOL2	92 540 804	27947	31,94	76,4
GGA-UEDIN-GW-WP1-lung-E15-3	58 144 611	17560	32	76,66
GGA-UEDIN-GW-WP1-hindlimb-muscle-E15-2	90 135 913	27221	31,81	75,83
GGA-UEDIN-GW-WP1-cerebellum-E15-4	98 436 624	29728	31,12	72,51
GGA-UEDIN-GW-WP1-small-intestine-HC-2	57 013 848	17218	31,72	75,19
GGA-UEDIN-GW-WP1-skin-HC-2	68 659 630	20735	31,81	75,9
GGA-UEDIN-GW-WP1-small-intestine-E15-2	86 006 233	25974	31,87	75,96
GGA-UEDIN-GW-WP1-kidney-E15-2	81 595 659	24642	30,69	70,8
mean	69 516 867	20 994	32	75

Pig smallRNA-seq:

Sample ID	# Reads	Yield (Mbases)	Mean Quality Score	% Bases >= 30
SSR-INRA-GS-WP1-Cerebellum-FT-70dpf-4	37 789 784	11413	31,27	73,52
SSR-INRA-GS-WP1-liver-FT-70dpf-2	69 323 631	20936	30,94	71,77
SSR-INRA-GS-WP1-Lung-FT-70dpf-2	69 795 446	21078	31,32	73,75
SSR-INRA-GS-WP1-Hindbrain-FT-30dpf-POOL-2	66 534 542	20093	31,37	73,99
SSR-INRA-GS-WP1-Lung-FT-30dpf-POOL-6	73 190 236	22103	31,27	73,46
SSR-INRA-GS-WP1-kidney-NB-M-1	78 452 797	23693	31,23	73,52
SSR-INRA-GS-WP1-kidney-NB-F-4	65 383 892	19746	31,22	73,35
SSR-INRA-GS-WP1-Kidney-FT-30dpf-POOL-3	66 872 952	20196	31,27	73,54
SSR-INRA-GS-WP1-Liver-NB-M-1	31 713 597	9578	31,1	72,7
SSR-INRA-GS-WP1-Lung-NB-F-3	57 870 084	17477	31,38	74
SSR-INRA-GS-WP1-Hindbrain-FT-30dpf-POOL-1	44 041 149	13300	31,13	72,91
SSR-INRA-GS-WP1-Kidney-FT-30dpf-POOL-6	66 610 737	20116	31,38	74,11
SSR-INRA-GS-WP1-hindlimb-muscle-FT-70dpf-3	66 622 112	20120	30,5	69,88
SSR-INRA-GS-WP1-liver-FT-70dpf-3	79 183 090	23913	31,3	73,56
SSR-INRA-GS-WP1-Back-skin-FT-70dpf-4	77 170 785	23306	31,33	73,79
SSR-INRA-GS-WP1-Lung-FT-30dpf-POOL-2	77 893 029	23524	31,33	73,77
SSR-INRA-GS-WP1-Kidney-FT-70dpf-4	84 942 092	25653	31,25	73,49



SSR-INRA-GS-WP1-Skin-FT-30dpf-POOL-2	74 567 126	22519	31,24	73,32
SSR-INRA-GS-WP1-Ileum-NB-M-1	70 630 148	21330	31,21	73,31
SSR-INRA-GS-WP1-Liver-NB-M-2	76 100 286	22982	31,2	73,09
SSR-INRA-GS-WP1-Kidney-FT-30dpf-POOL-2	69 871 489	21101	31,34	73,83
SSR-INRA-GS-WP1-back-skin-NB-M-2	66 708 937	20146	30,2	68,69
SSR-INRA-GS-WP1-Kidney-FT-70dpf-1	70 934 940	21422	31,27	73,68
SSR-INRA-GS-WP1-Hindlimb-muscle-FT-30dpf-POOL-2	64 247 160	19403	31,38	74,01
SSR-INRA-GS-WP1-Kidney-FT-70dpf-2	67 176 317	20287	30,54	70,09
SSR-INRA-GS-WP1-Liver-FT-30dpf-POOL-6	47 506 155	14347	30,62	70,28
SSR-INRA-GS-WP1-Ileum-NB-M-2	71 167 769	21493	31,23	73,41
SSR-INRA-GS-WP1-Hindlimb-muscle-FT-30dpf-POOL-3	63 746 186	19251	31,38	74,01
SSR-INRA-GS-WP1-liver-FT-70dpf-4	55 949 538	16897	31,06	72,33
SSR-INRA-GS-WP1-Lung-NB-F-4	71 891 889	21711	31,17	72,98
SSR-INRA-GS-WP1-Hindbrain-FT-30dpf-POOL-6	69 848 479	21094	31,31	73,75
SSR-INRA-GS-WP1-cerebellum-NB-F-4	60 859 667	18380	31,18	73,12
SSR-INRA-GS-WP1-Back-skin-FT-70dpf-3	64 289 378	19415	31,34	73,79
SSR-INRA-GS-WP1-cerebellum-NB-M-1	42 017 798	12689	31,28	73,55
SSR-INRA-GS-WP1-Kidney-FT-30dpf-POOL-1	69 618 161	21025	30,5	69,9
SSR-INRA-GS-WP1-Cerebellum-FT-70dpf-3	70 929 427	21421	30,87	71,49
SSR-INRA-GS-WP1-Liver-NB-F-4	36 267 999	10953	31,11	72,82
SSR-INRA-GS-WP1-Small-Intestine-FT-30dpf-POOL-1	68 580 028	20711	31,35	73,91
SSR-INRA-GS-WP1-Lung-FT-70dpf-4	66 937 004	20215	30,29	69,08
SSR-INRA-GS-WP1-Ileum-NB-F-4	42 494 956	12833	30,86	71,48
SSR-INRA-GS-WP1-kidney-NB-M-2	72 176 009	21797	31,1	72,73
SSR-INRA-GS-WP1-gluteus-medius-NB-F-4	67 064 379	20253	31,27	73,5
SSR-INRA-GS-WP1-small-intestine-FT-70dpf-3	69 727 181	21058	31,36	73,89
SSR-INRA-GS-WP1-Lung-FT-30dpf-POOL-3	78 115 549	23591	31,33	73,82
SSR-INRA-GS-WP1-hindlimb-muscle-FT-70dpf-4	68 922 554	20815	31,5	74,42
SSR-INRA-GS-WP1-Kidney-FT-70dpf-3	62 760 272	18954	31,25	73,49
SSR-INRA-GS-WP1-gluteus-medius-NB-M-2	59 902 935	18091	31,22	73,08
SSR-INRA-GS-WP1-back-skin-NB-F-4	63 050 335	19041	31,24	73,35
SSR-INRA-GS-WP1-hindlimb-muscle-FT-70dpf-1	74 321 255	22445	31,36	73,81
SSR-INRA-GS-WP1-back-skin-NB-M-1	70 217 982	21206	31,43	74,2
SSR-INRA-GS-WP1-Lung-FT-30dpf-POOL-1	48 863 183	14757	31,31	73,78
SSR-INRA-GS-WP1-Skin-FT-30dpf-POOL-3	78 248 067	23631	31,31	73,76
SSR-INRA-GS-WP1-Cerebellum-FT-70dpf-1	48 421 996	14623	31,3	73,62
SSR-INRA-GS-WP1-Lung-FT-70dpf-1	83 713 239	25281	31,38	73,99
SSR-INRA-GS-WP1-Lung-FT-70dpf-3	65 723 815	19849	31,32	73,79
SSR-INRA-GS-WP1-Skin-FT-30dpf-POOL-6	72 892 211	22013	31,24	73,3
SSR-INRA-GS-WP1-liver-FT-70dpf-1	62 273 080	18806	31,15	72,8
SSR-INRA-GS-WP1-Cerebellum-FT-70dpf-2	60 489 438	18268	31,24	73,34
SSR-INRA-GS-WP1-Back-skin-FT-70dpf-1	65 553 977	19797	31,28	73,53
SSR-INRA-GS-WP1-Back-skin-FT-70dpf-2	69 405 554	20960	30,65	70,53
SSR-INRA-GS-WP1-Skin-FT-30dpf-POOL-1	64 566 342	19499	31,45	74,35
SSR-INRA-GS-WP1-back-skin-NB-F-3	68 671 791	20739	31,29	73,6
SSR-INRA-GS-WP1-Small-Intestine-FT-30dpf-POOL-6	71 270 117	21524	30,71	70,8
SSR-INRA-GS-WP1-small-intestine-FT-70dpf-4	64 658 919	19527	31,25	73,37



SSR-INRA-GS-WP1-cerebellum-NB-M-2	61 872 313	18685	31,11	72,56
SSR-INRA-GS-WP1-Lung-NB-M-2	76 122 784	22989	31,22	73,33
SSR-INRA-GS-WP1-small-intestine-FT-70dpf-2	67 568 790	20406	31,31	73,73
SSR-INRA-GS-WP1-small-intestine-FT-70dpf-1	76 750 027	23179	31,34	73,85
SSR-INRA-GS-WP1-Small-Intestine-FT-30dpf-POOL-3	69 235 351	20909	31,35	73,95
SSR-INRA-GS-WP1-Liver-FT-30dpf-POOL-2	51 442 403	15536	31,19	73,02
SSR-INRA-GS-WP1-Liver-FT-30dpf-POOL-1	47 420 259	14321	30,82	71,31
SSR-INRA-GS-WP1-Lung-NB-M-1	71 779 857	21678	31,18	73,12
SSR-INRA-GS-WP1-Ileum-NB-F-3	61 210 933	18486	31,11	72,78
SSR-INRA-GS-WP1-Liver-NB-F-3	35 923 219	10849	30,85	71,42
SSR-INRA-GS-WP1-Hindbrain-FT-30dpf-POOL-3	77 122 987	23291	31,29	73,64
SSR-INRA-GS-WP1-cerebellum-NB-F-3	65 571 680	19803	31,23	73,22
SSR-INRA-GS-WP1-hindlimb-muscle-FT-70dpf-2	72 046 019	21758	31,33	73,61
SSR-INRA-GS-WP1-Liver-FT-30dpf-POOL-3	60 372 418	18232	31,28	73,49
SSR-INRA-GS-WP1-Small-Intestine-FT-30dpf-POOL-2	80 895 357	24430	31,38	74,06
SSR-INRA-GS-WP1-Hindlimb-muscle-FT-30dpf-POOL-6	75 380 789	22765	31,37	73,99
SSR-INRA-GS-WP1-gluteus-medius-NB-F-3	99 828 254	30148	31,29	73,58
SSR-INRA-GS-WP1-kidney-NB-F-3	77 754 145	23482	31,26	73,59
SSR-INRA-GS-WP1-Hindlimb-muscle-FT-30dpf-POOL-1	51 551 722	15569	31,41	74,21
SSR-INRA-GS-WP1-gluteus-medius-NB-M-1	67 659 235	20433	31,37	73,83
mean	65 883 923	19 897	31	73

## 4 Conclusion

All fastq files and associated metadata for RNAseq data and small RNAseq data (84 chicken samples and 84 pig samples for each) have been submitted to the European Nucleotide Archive (ENA) under accession numbers PRJEB42001 (for pig smallRNA-seq data), PRJEB42041 (for chicken smallRNA-seq data), PRJEB42025 (for pig mRNA-seq data) and PRJEB41970 (for chicken mRNA-seq data).

## 5 Deviations or delays

Delays to sample preparation (RNA extraction) were caused by lockdown. Time made up once lab access was allowed.

For smallRNA-seq, we initially planned to generate 40M 50SE reads per sample. However, we contracted the sequencing to Genewiz instead of Edinburgh Genomics and their standard smallRNAseq pipeline was to do PE sequencing. Our resultant data are therefore represented by a mean of 65M 150PE reads per library.



## 6 Acknowledgements

We would like to acknowledge Genewiz for their sequencing services