



Supplementary Figure 1. Expanded view of the avian TCR Vα/δ groups shown in color in Figure 2. Keys to the individual sequence numbers are in Supplementary table 1.

A

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Chicken834 AVSRAQVQQEPSAETSEGTGINITCSHPNVQPGDYIHWRQLPGRAPTFLVNAFKDSKELPDPAGWLSVSDRRSSALWLTRPRLGDAAVYYC
Chicken791 -----S-S-G-V-----
Chicken578 -----D-V-----M-A.-TT-----G-A--R-V---KV-E-E-R-W-----K-K-----
Chicken561 -----I-----I---YS-Q---F---G-A--STV---KV---Q-R-W-----AQ-----
Chicken524 -----ILSS-----S-V-GT-NV-----V-C---Q-L-----
Chicken324 -----D-----SI-SY--Y---F---G-A--S---QG---V---E-R-W-----AQ---V---
Chicken372 S-----D-----L-DI-ST--Y---F---G---EFIHEG---RNLV-RV-----S---AQ-GF-----
Turkey225 .....I-----Y-----G-A--S-A-G-QV---E-Q-W-----C-----
Turkey688 -----IT--E-----T-FNQV-----G-A--S-VSG---V---E-R-W-----L-AQ-----
Parrot880 G----I--D--V--T-D-A-S-N---LPRT-F-G---F---G-E--S-L-GF-Q-E--K-R---A---NV---AQ---R---
Parrot999 G----I--D--V--T-D-A-S-N---H-LPRS-F-----F---G-E--S-VQG--Q-Q--K-R---A---NV---A---R---
Finch837 --A-----LL--T--S-----KI-TS--Q-----G-EL-ALTM---K--GI--E-W-----W---R-GG--R---
Finch164 --A-----L--T-----KI-TSET-Y-----QG-EY-ASVH---K--GI--E-W-----W---R-GG--R---
Finch198 --A-----L--T-----KI-TSET-Y-----G-EY-ASVH---K--GI--E-W-----W---R-GG--R---
Finch816 T-A-----L--T-----KI-T-----QG-E--ALTM-E--K--GI--E-W-----W---R-GG--R---

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B

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Chicken827 DAMGQTIVSQQEGQVTVEERNTFQTTCTYQTPYFNSLYWYQQKKGQALQLVTVYQAAAGSKHNGRFTTWLNTTAKYSLRLRLAEVELSDSALYFC
Chicken559 -----S-----S-----P-----L-----
Chicken445 -----SS-YG-F-----P-----P-----L-----
Chicken731 -----SS-YG-F-----P-----P-----L-----
Chicken454 -----R--V--G-----P-----P-----L-----
Chicken469 -----I-----R--V--G-----P-----P-----L-----
Turkey154 -----T-----AAN--G-F-----P-----T---Q---S---T--G-----L-----
Turkey483 --V-----AAN--G-F-----P-----Q-----E-----L-----
Turkey410 -----AAN-Y--F-----P-----T---Q-----E---Q-----V--L-----
Turkey254 -----T-----ASS-DAFL-----P-----T---Q-----E-----L-----
Duck069 ET--VS-T-E---S---Q-----N---SSN-YG-F-----P-RIS--G--T-Q-----E---SD-S-V-Q-K-----L-----
Duck070 -----S-T-----KQKE-----I-SLYA-----P--I-HTR--T-QSD-L--EM--ER-S-V--K-----L-----
Duck922 ETT--VS-I-----QG---N---E-SS-KG-L-----P--IS--G--T-QRD-L--E---ER-S-V-Q-K-----F-----
Grouse681 G-V-----Q-----ASSLYG-F-----P-----Q-----G-----T--L-----
Parrot412 GT--IT-T-----K--E-----SN-QG-V-----P--IS--G--RS-----G---K-Q-----L-----
Finch066 GTS--DT-T-KD-T---KQGHP-H---K--NTN-GG-L--LQ-----P--LS--VGS-R--S--I--Y---G-S-V-Q-E-----L-----
Finch571 GTS--DT-T-DD-T---KQGHP-H---K--NTN-GG-L--LQ-----P--LS--VGS-R--S--I--H---G-S-V-Q-E-----L-----
Finch419 GTS--DT-T-DD-P---KQGHP-H---K--SSN-YA-L--LQ-----P--LS--TGS-R--S--I--Y---G-S-V-Q-E-----L-----

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C

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Chicken354 QASGGGVRAPGQSVQLSRGSGFSFGSYDVLWYRQALGGHPEWLSYIDS.SSYIIRYSPDVEGRATVSRDDSRVSYLSLRALRPHDSAHYLC
Chicken339 ET-----T-----RL--S-WP.G-SNT---T-----V-----
Chicken213 ET--D---D---H-Y--I---GIS-RL-----Y...S-----Q--Q---SN--Q--R---
Chicken199 ET-----D---F-Q-----A-----GIS-RL-----Y...TV---L-----Q--Q---ST--Q---
Chicken184 ET-----D---HF-Q---N-----RL-----R.W---T---G-----Q--H-T-SS--Q---
Turkey795 E-----Q---E--R---Q---G---S-H-----L-----SP-R-SYV-S-SE-Q---S---E-Q-----F-----
Turkey097 E-----Q---E--R---Q---V-----RL-----SA.G--TV-L--L-A-----E-Q---S---HT-C-----F-----
Parrot297a EEA--L---D---L---AY-YN-EN-PFR-----P--RL--V-LSW...LGATE-AAA-----M-W-NLQ-K-S---H--Q-Q---R-F---
Parrot297b EET--L--A-D-L---Y--T-ADTE-----P--RL--V-F-W.YD-SVTHFVQS-Q---NA---N---E-S-L-S--Q-Q---R-F---
Parrot509 GGDRRRAASG-D-L---Y--R-AITT-R-F---A--RF--V---N.FD-SV-KFAQS--S--N---N---E-S-L-S--Q-Q---R-F---
Parrot807 EET--L---D---L---Y--N-R-TI-----P--GL--V-S-H.PQ-TET..AAA---VN---N---EAS--S--Q-Q---R-Y---
Parrot128 EET--L--A-DF-L---Y--R-AIPS-R---A--T---V---S.YN-SV-TFVQS-Q---NA---N-Q-E-S-F-S--Q-Q---R-Y---
Finch495 ES-SRS-QPHQVPTMSH-TSPV-P.....K-KS-Q..APT--V-F-TR.W-NVKT-GAA-K-Q--A---NYQ-Q-S-V-V--H-N---R-F---
Finch497 -EA--L---D---IT-----T-KD-EI---SP--RL--V-F-S-PMGTED-GAA-K--KI--N---EAF---S-QGQ---R-F---
Finch502 -EA--L---D---T-----T-ENHY-R---PR-RF--V-W-S.HY-SQ-QFGSAL---A--NN-H-LAF---HL-HAG-G-R-F---

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D

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Finch500 GQVALEQQPREVTQEGNEVTFECSMKGEARSFFMYWYHQPGGSLKFIYREGDIYGEDFQKKFVGSVEGSST..TLQILAAEQGDAGTYYC
Finch516 -----G---K--L--LQ--L--GDM-SYD---R---H-.MQY-SMG-YN---G-EGR-I-KK-N-KNNF-----PAM---

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Supplementary Figure 2. Alignment of predicted amino acid sequence of avian $V\alpha/\delta$ gene segments. Representative gene segments from the chicken and zebra finch were aligned by group to available sequences from turkey, duck, parrot and grouse. A. $V\alpha 1$. B. $V\alpha 2$. C. $V\delta 1$. D. Zebra finch $V\delta 2$ and $V\delta 4$. Conserved cysteine residues involved in intrachain disulfide bonds are highlighted in gray. Alignments were performed as in Fig 2. Chromosome location: **Chicken**: chr27: A: 834130, 791237, 578060, 561959, 524524, 392324, 372896; B: 827857, 559594, 445728, 731817, 454878, 469158; C: 354411, 339894, 213690, 199617, 184349. **Finch**: chr27: A: 3074837, 3074164, 3068198, 3063816; B: 3078066, 3071571, 3065419; C: 3054507, 3051702, 3047500; D: 3049227, 3033533. GenBank accession numbers: **Turkey**: A: ADDD01150225, ADDD01152688; B: XM003214154, ADDD01149483, ADDD01151410, ADDD01148254; C: ADDD01147795, ADDD01052097. **Duck**: C: AY446069, AY446070, AF323922. **Grouse**: GW705681. **Parrot**: A: AGAI01024880, AGAI01025999; B: AGAI01023412; C: AGAI01044297a, AGAI01044297b, AGAI01011509, AGAI01045807, AGAI01030128.

Supplementary Table 1. GenBank accession numbers of sequences used in Figure 2.

Human: D13077, X57534, DQ097913, X57531, DQ097942, DQ097904, DQ097923, DQ097920, DQ097934, X58747, M17661, U50404, D13071, X04939, M17663, L06886, DQ097917, M23326, S24406, S51029, Z46641, D13074, AY357942.
Mouse: M33586, X60319, M38680, M34200, DQ340292, M38102, L47342, X56719, L77149, M38681, X57397, M22604, X03760, M94080, X12729, M23545, M16118, M37280.
Rabbit: M12885, D38120, D38121, D26555.
Cow: D90014, D90013, D90015, D90017, D90016, D16116, D16113.
Sheep: M55622, U78035, Z12989, AJ005908, AJ809501, AJ005906, AJ005904.
Opossum: 1:170335765, 1:170871041, 1:170526288, 1:170551083, 1:170570283, 1:170631865, 1:170920360, 1:171131484, 1:171163817, 1:171195327, 1:171063965, 1:171400567, 1:171424064, 1:171516536.
Platypus: Contig588: 65084, 113349, 272101, 119034, 94519, 138260, 264672, 282691, 279731, 254561, 208194, 232113, 252621, 244820, 390001, 330771, 319084, 321892, 333595, 86585, 72473, 128601.
Chicken: GDU04613, GDU04612, GDU04611. 27:539806, 27:605964, 27:408169, 27:352253, 27:343816, 27:320714, 27:239474, 27:211238, 27:157643, 27:621049, 27:367695, 27:827799, 27:731787, 27:521954, 27:369106, 27:354387, 27:282064, 27:174376, 27:155745, 27:195391, 27:192800, 27:186069, 27:152327.
Turkey: ADDD01150225, ADDD01152688, ADDD01149483, ADDD01147795, ADDD01052097.
Grouse: GW705681.
Duck: AY446069, AY446070.
Parrot: AGAI01024880, AGAI01025999, AGAI01023412, AGAI01044297b, AGAI01011509, AGAI01045807.
Zebra finch: 27:3080320, 27:3295542, 27:3295701, 27:3065141, 27:3078335, 27:3295542, 27:3295701, 27:3054372, 27:3054238, 27:3051412, 27:3048940, 27:3033243, 27:3047397.
Frog: GL173175.1: 241265, 245577, 386590, 396349, 504371, 586770, 568332, 583528, 636068, 206989, 213658.