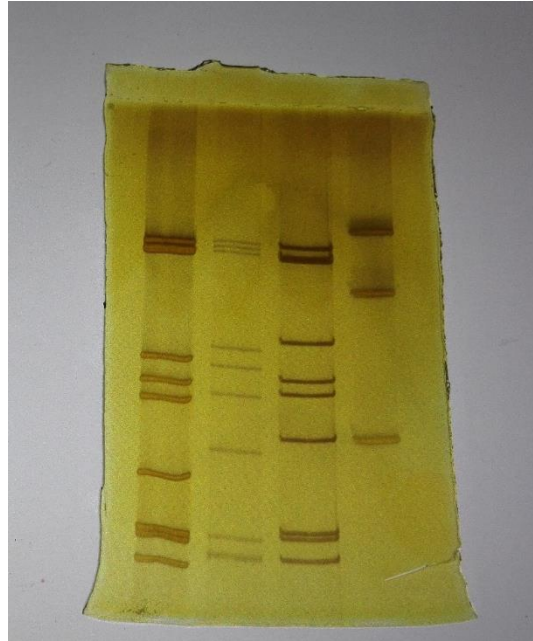


# Phenotypic and genetic characterisation of an emerging reovirus from Pekin ducks in China

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**Figure S1.** SDS-PAGE analysis of the genomic segment mobility of HC (a duck reovirus), Ych and S1133 (a chicken reovirus). Full-length gel of Figure 1c.

**Table S1.** Nucleotide and amino acid sequence identities of protein  $\lambda$ A of the isolate Ych to representative members of avian reovirus (%)

Virus	1	2	3	4	5	6	7	8	9
1.S1133 <sup>a</sup>	***	85.0	77.5	78.1	78.1	77.8	78.0	72.3	72.7
2.D1246 <sup>b</sup>	96.6	***	77.4	77.9	77.6	78.2	77.9	72.5	72.1
3.ZJ00M <sup>c</sup>	94.7	94.8	***	94.4	86.8	86.2	87.1	71.4	71.6
4.HC <sup>c</sup>	94.3	94.4	99.0	***	86.4	86.5	86.9	71.8	72.0
5.03G <sup>c</sup>	94.4	94.3	98.0	97.7	***	89.9	89.1	72.4	72.2
6.ZJ2000M <sup>d</sup>	94.4	94.5	97.7	97.5	97.4	***	89.6	71.4	71.9
7.D20/99 <sup>d</sup>	94.0	94.2	97.3	97.0	97.3	96.9	***	71.5	71.5
8.D2533/6/1-10 <sup>e</sup>	83.8	84.0	83.6	83.4	83.6	83.5	83.5	***	94.1
9.Ych <sup>e</sup>	84.5	84.5	84.2	83.8	84.0	84.1	83.9	98.1	***

<sup>a</sup>chicken (S1133, KF741756.1) origin ARV; <sup>b</sup>turkey (D1246, KR997909.1) origin ARV; <sup>c</sup>“novel” waterfowl origin ARVs: Muscovy duck (ZJ00M, KF154110.1), Pekin duck (HC) and Goose (03G, JX145328.1); <sup>d</sup>“classical” waterfowl origin ARVs: Muscovy duck (ZJ2000M, KF306082.1) and Goose (D20/99, KF809662.1); <sup>e</sup>new emerge duck reovirus: Pekin duck (D2533/6/1-10, MH520085.1; Ych, MK173029); The amino acid sequence identities were highlighted with the gray background.

**Table S2.** Nucleotide and amino acid sequence identities of protein  $\lambda$ B of the isolate Ych to representative members of avian reovirus (%)

Virus	1	2	3	4	5	6	7	8	9
1.S1133 <sup>a</sup>	***	83.8	75.7	75.8	75.5	76.3	75.2	67.5	67.4
2.D1246 <sup>b</sup>	95.6	***	76.0	75.7	75.8	76.1	75.3	66.5	66.8
3.ZJ00M <sup>c</sup>	91.3	91.2	***	98.0	87.9	88.5	88.5	65.9	66.0
4.HC <sup>c</sup>	91.3	91.2	99.3	***	87.8	88.4	88.4	66.2	66.0
5.03G <sup>c</sup>	91.4	91.0	97.5	97.3	***	93.4	91.6	66.9	66.5
6.ZJ2000M <sup>d</sup>	91.7	91.1	98.3	98.3	97.6	***	93.0	66.7	66.3
7.D20/99 <sup>d</sup>	91.5	91.3	98.1	98.0	97.2	97.9	***	66.4	66.0
8.D2533/6/1-10 <sup>e</sup>	75.6	74.8	75.1	75.0	75.2	75.3	74.8	***	91.7
9.Ych <sup>e</sup>	76.0	75.5	75.9	75.8	75.8	76.1	75.6	97.4	***

<sup>a</sup>chicken (S1133, KF741757.1) origin ARV; <sup>b</sup>turkey (D1246, KR997910.1) origin ARV; <sup>c</sup>“novel” waterfowl origin ARVs: Muscovy duck (ZJ00M, KF154111.1), Pekin duck (HC) and Goose (03G, JX145329.1); <sup>d</sup>“classical” waterfowl origin ARVs: Muscovy duck (ZJ2000M, KF306083.1) and Goose (D20/99, KF809663.1); <sup>e</sup>new emerge duck reovirus: Pekin duck (D2533/6/1-10, MH520086.1; Ych, MK173030); The amino acid sequence identities were highlighted with the gray background.

**Table S3.** Nucleotide and amino acid sequence identities of protein  $\lambda$ C of the isolate Ych to representative members of avian reovirus (%)

Virus	1	2	3	4	5	6	7	8	9
1.S1133 <sup>a</sup>	***	71.7	70.1	70.1	70.0	69.9	69.4	55.3	56.0
2.D1246 <sup>b</sup>	82.0	***	70.3	70.3	70.1	70.3	69.5	55.6	55.7
3.ZJ00M <sup>c</sup>	79.5	79.7	***	98.4	96.8	79.9	78.9	56.7	56.2
4.HC <sup>c</sup>	79.4	79.6	99.7	***	97.5	80.3	79.2	56.8	56.2
5.03G <sup>c</sup>	79.2	79.1	98.6	98.8	***	80.4	79.4	56.9	56.4
6.ZJ2000M <sup>d</sup>	78.5	79.9	93.2	93.3	93.1	***	82.5	57.6	56.3
7.D20/99 <sup>d</sup>	78.3	79.5	92.2	92.4	92.3	92.2	***	56.9	56.5
8.D2533/6/1-10 <sup>e</sup>	55.1	54.4	56.2	56.2	56.1	55.8	55.8	***	87.7
9.Ych <sup>e</sup>	54.9	54.6	55.9	56.0	55.8	55.6	55.4	94.9	***

<sup>a</sup>chicken (S1133, KF741758.1) origin ARV; <sup>b</sup>turkey (D1246, KR997911.1) origin ARV; <sup>c</sup>“novel” waterfowl origin ARVs: Muscovy duck (ZJ00M, KF154112.1), Pekin duck (HC) and Goose (03G, JX145330.1); <sup>d</sup>“classical” waterfowl origin ARVs: Muscovy duck (ZJ2000M, KF306084.1) and Goose (D20/99, KF809664.1); <sup>e</sup>new emerge duck reovirus: Pekin duck (D2533/6/1-10, MH520087.1; Ych, MK173031); The amino acid sequence identities were highlighted with the gray background.

**Table S4.** Nucleotide and amino acid sequence identities of protein  $\mu$ A of the isolate Ych to representative members of avian reovirus (%)

Virus	1	2	3	4	5	6	7	8	9
1.S1133 <sup>a</sup>	***	87.9	73.6	73.6	73.6	72.9	73.6	60.1	59.5
2.D1246 <sup>b</sup>	95.4	***	74.1	74.1	74.1	72.7	73.2	60.3	60.3
3.ZJ00M <sup>c</sup>	86.6	86.4	***	97.9	96.4	81.0	79.9	60.2	60.5
4.HC <sup>c</sup>	86.2	86.4	98.4	***	97.0	81.0	80.4	60.3	60.5
5.03G <sup>c</sup>	86.2	86.1	97.0	97.8	***	80.9	80.1	60.4	60.7
6.ZJ2000M <sup>d</sup>	85.3	85.3	94.3	94.8	93.6	***	82.4	58.6	58.7
7.D20/99 <sup>d</sup>	85.4	84.9	90.7	91.5	90.6	91.7	***	58.6	58.4
8.D2533/6/1-10 <sup>e</sup>	59.6	59.2	59.2	59.4	59.7	59.2	58.6	***	93.4
9.Ych <sup>e</sup>	61.1	60.6	60.8	61.1	61.1	61.0	60.4	93.3	***

<sup>a</sup>chicken (S1133, KF741759.1) origin ARV; <sup>b</sup>turkey (D1246, KR997912.1) origin ARV; <sup>c</sup>“novel” waterfowl origin ARVs: Muscovy duck (ZJ00M, KF154113.1), Pekin duck (HC) and Goose (03G, JX145331.1); <sup>d</sup>“classical” waterfowl origin ARVs: Muscovy duck (ZJ2000M, KF306085.1) and Goose (D20/99, KF809665.1); <sup>e</sup>new emerge duck reovirus: Pekin duck (D2533/6/1-10, MH520088.1; Ych, MK173032); The amino acid sequence identities were highlighted with the gray background.

**Table S5.** Nucleotide and amino acid sequence identities of protein  $\mu$ B of the isolate Ych to representative members of avian reovirus (%)

Virus	1	2	3	4	5	6	7	8	9
1.S1133 <sup>a</sup>	***	75.5	76.7	76.5	76.2	69.3	68.9	64.8	64.8
2.D1246 <sup>b</sup>	88.0	***	76.5	76.1	75.7	67.4	67.1	64.3	65.2
3.ZJ00M <sup>c</sup>	89.6	89.9	***	98.2	87.9	67.6	67.8	65.2	65.8
4.HC <sup>c</sup>	89.5	89.8	99.0	***	88.4	67.4	67.7	65.1	65.7
5.03G <sup>c</sup>	88.9	89.4	96.0	96.2	***	67.7	67.5	65.9	65.9
6.ZJ2000M <sup>d</sup>	75.6	76.1	76.3	76.5	75.6	***	92.5	62.1	62.8
7.D20/99 <sup>d</sup>	75.2	75.9	76.3	76.2	75.3	96.9	***	61.9	62.5
8.D2533/6/1-10 <sup>e</sup>	70.3	72.3	70.9	71.2	71.7	67.2	66.6	***	89.6
9.Ych <sup>e</sup>	70.0	72.1	71.2	71.5	72.0	66.9	66.5	98.5	***

<sup>a</sup>chicken (S1133, KF741760.1) origin ARV; <sup>b</sup>turkey (D1246, KR997913.1) origin ARV; <sup>c</sup>“novel” waterfowl origin ARVs: Muscovy duck (ZJ00M, KF154114.1), Pekin duck (HC) and Goose (03G, JX145332.1); <sup>d</sup>“classical” waterfowl origin ARVs: Muscovy duck (ZJ2000M, KF306086.1) and Goose (D20/99, KF809666.1); <sup>e</sup>new emerge duck reovirus: Pekin duck (D2533/6/1-10, MH520089.1; Ych, MK173033); The amino acid sequence identities were highlighted with the gray background.

**Table S6.** Nucleotide and amino acid sequence identities of protein  $\mu$ NS of the isolate Ych to representative members of avian reovirus (%)

Virus	1	2	3	4	5	6	7	8	9
1.S1133 <sup>a</sup>	***	88.6	71.8	71.5	72.0	71.6	72.5	59.0	58.6
2.D1246 <sup>b</sup>	94.2	***	72.0	71.9	71.9	71.6	71.2	58.5	58.2
3.ZJ00M <sup>c</sup>	80.5	80.8	***	98.1	94.8	86.4	79.3	58.3	57.6
4.HC <sup>c</sup>	81.0	81.1	98.6	***	95.0	86.6	79.4	58.1	57.8
5.03G <sup>c</sup>	80.7	80.8	96.4	97.0	***	87.0	78.9	58.2	57.8
6.ZJ2000M <sup>d</sup>	80.5	81.0	93.7	94.0	93.9	***	78.7	58.8	58.2
7.D20/99 <sup>d</sup>	80.7	80.7	90.1	90.9	90.1	89.9	***	57.5	58.5
8.D2533/6/1-10 <sup>e</sup>	56.5	57.3	56.0	56.6	56.5	55.8	57.1	***	92.1
9.Ych <sup>e</sup>	56.0	56.5	56.0	56.6	56.5	55.8	57.1	95.8	***

<sup>a</sup>chicken (S1133, KF741761.1) origin ARV; <sup>b</sup>turkey (D1246, KR997914.1) origin ARV; <sup>c</sup>“novel” waterfowl origin ARVs: Muscovy duck (ZJ00M, KF154115.1), Pekin duck (HC) and Goose (03G, JX145333.1); <sup>d</sup>“classical” waterfowl origin ARVs: Muscovy duck (ZJ2000M, KF306087.1) and Goose (D20/99, KF809667.1); <sup>e</sup>new emerge duck reovirus: Pekin duck (D2533/6/1-10, MH520090.1; Ych, MK173034); The amino acid sequence identities were highlighted with the gray background.

**Table S7.** Nucleotide and amino acid sequence identities of protein  $\sigma$ C of the isolate Ych to representative members of avian reovirus (%)

Virus	1	2	3	4	5	6	7	8	9
1.S1133 <sup>a</sup>	***	61.0	39.1	39.3	39.0	35.6	34.9	42.5	43.6
2.D1246 <sup>b</sup>	57.2	***	40.0	40.6	40.3	36.5	36.5	41.1	40.7
3.ZJ00M <sup>c</sup>	28.6	27.0	***	97.3	97.4	52.0	50.7	41.7	40.7
4.HC <sup>c</sup>	28.6	27.0	97.5	***	97.8	51.7	51.2	42.0	40.9
5.03G <sup>c</sup>	28.3	27.4	97.5	98.8	***	52.4	51.3	41.4	40.4
6.ZJ2000M <sup>d</sup>	25.2	21.1	41.5	41.5	41.9	***	90.7	37.2	37.5
7.D20/99 <sup>d</sup>	25.9	22.6	41.1	41.1	41.5	91.9	***	37.2	37.3
8.D2533/6/1-10 <sup>e</sup>	21.6	21.6	27.6	27.0	27.0	24.4	24.8	***	85.5
9.Ych <sup>e</sup>	22.2	22.2	27.3	26.7	26.7	25.2	24.8	91.7	***

<sup>a</sup>chicken (S1133, KF741762.1) origin ARV; <sup>b</sup>turkey (D1246, KR997915.1) origin ARV; <sup>c</sup>“novel” waterfowl origin ARVs: Muscovy duck (ZJ00M, KF154116.1), Pekin duck (HC) and Goose (03G, JX145334.1); <sup>d</sup>“classical” waterfowl origin ARVs: Muscovy duck (ZJ2000M, KF306091.1) and Goose (D20/99, KF809668.1); <sup>e</sup>new emerge duck reovirus: Pekin duck (D2533/6/1-10, MH520091.1; Ych, MK173035); The amino acid sequence identities were highlighted with the gray background.

**Table S8.** Nucleotide and amino acid sequence identities of protein  $\sigma$ A of the isolate Ych to representative members of avian reovirus (%)

Virus	1	2	3	4	5	6	7	8	9
1.S1133 <sup>a</sup>	***	91.3	77.5	77.1	77.0	76.4	76.4	63.5	63.6
2.D1246 <sup>b</sup>	96.9	***	77.5	77.9	77.4	77.1	77.3	62.5	63.7
3.ZJ00M <sup>c</sup>	91.6	91.8	***	88.7	88.8	89.8	86.6	63.2	63.8
4.HC <sup>c</sup>	91.4	91.6	98.3	***	97.0	95.3	87.8	64.4	64.3
5.03G <sup>c</sup>	90.9	91.1	97.6	99.3	***	95.4	87.8	64.0	64.1
6.ZJ2000M <sup>d</sup>	91.1	91.4	98.6	99.3	98.6	***	88.8	64.4	64.3
7.D20/99 <sup>d</sup>	90.4	90.9	96.4	96.6	95.9	96.9	***	63.9	63.9
8.D2533/6/1-10 <sup>e</sup>	66.7	66.7	66.4	67.1	66.9	66.9	66.9	***	89.6
9.Ych <sup>e</sup>	66.9	66.9	66.7	67.4	67.1	67.1	67.1	96.4	***

<sup>a</sup>chicken (S1133, KF741763.1) origin ARV; <sup>b</sup>turkey (D1246, KR997916.1) origin ARV; <sup>c</sup>“novel” waterfowl origin ARVs: Muscovy duck (ZJ00M, KF154117.1), Pekin duck (HC) and Goose (03G, JX145335.1); <sup>d</sup>“classical” waterfowl origin ARVs: Muscovy duck (ZJ2000M, KF306088.1) and Goose (D20/99, KF809669.1); <sup>e</sup>new emerge duck reovirus: Pekin duck (D2533/6/1-10, MH520092.1; Ych, MK173036); The amino acid sequence identities were highlighted with the gray background.

**Table S9.** Nucleotide and amino acid sequence identities of protein  $\sigma$ B of the isolate Ych to representative members of avian reovirus (%)

Virus	1	2	3	4	5	6	7	8	9
1.S1133 <sup>a</sup>	***	71.6	66.0	66.5	66.0	60.7	60.2	56.2	55.8
2.D1246 <sup>b</sup>	77.7	***	66.3	66.7	66.6	61.1	61.1	58.4	58.7
3.ZJ00M <sup>c</sup>	69.0	68.5	***	98.0	94.8	66.6	65.6	62.3	61.2
4.HC <sup>c</sup>	69.3	69.8	97.3	***	95.9	66.6	65.8	62.2	61.1
5.03G <sup>c</sup>	69.0	70.1	94.6	96.5	***	66.6	66.0	61.4	60.8
6.ZJ2000M <sup>d</sup>	62.0	63.3	69.3	70.4	69.6	***	93.2	58.8	59.2
7.D20/99 <sup>d</sup>	60.6	62.0	68.8	69.8	69.3	94.0	***	58.7	59.1
8.D2533/6/1-10 <sup>e</sup>	53.3	55.2	58.7	59.8	59.8	55.7	56.0	***	91.8
9.Ych <sup>e</sup>	52.4	55.4	59.2	60.3	60.3	56.2	56.5	97.6	***

<sup>a</sup>chicken (S1133, KF741764.1) origin ARV; <sup>b</sup>turkey (D1246, KR997917.1) origin ARV; <sup>c</sup>“novel” waterfowl origin ARVs: Muscovy duck (ZJ00M, KF154118.1), Pekin duck (HC) and Goose (03G, JX145336.1); <sup>d</sup>“classical” waterfowl origin ARVs: Muscovy duck (ZJ2000M, KF306089.1) and Goose (D20/99, KF809670.1); <sup>e</sup>new emerge duck reovirus: Pekin duck (D2533/6/1-10, MH520093.1; Ych, MK173037); The amino acid sequence identities were highlighted with the gray background.

**Table S10.** Nucleotide and amino acid sequence identities of protein  $\sigma$ NS of the isolate Ych to representative members of avian reovirus (%)

Virus	1	2	3	4	5	6	7	8	9
1.S1133 <sup>a</sup>	***	79.5	78.3	79.9	79.9	79.5	79.7	62.2	62.2
2.D1246 <sup>b</sup>	92.3	***	77.5	77.4	77.6	77.3	77.0	61.0	61.6
3.ZJ00M <sup>c</sup>	90.8	90.1	***	94.6	94.3	85.1	91.8	61.3	61.0
4.HC <sup>c</sup>	91.3	90.4	98.4	***	94.7	85.3	91.5	60.9	61.3
5.03G <sup>c</sup>	91.8	91.0	97.8	98.9	***	85.3	92.4	61.1	60.9
6.ZJ2000M <sup>d</sup>	92.7	91.2	97.3	97.3	97.3	***	85.1	62.0	62.0
7.D20/99 <sup>d</sup>	92.1	90.7	96.7	97.3	97.8	97.8	***	61.1	61.3
8.D2533/6/1-10 <sup>e</sup>	65.5	63.8	63.6	64.1	63.9	64.4	63.9	***	90.3
9.Ych <sup>e</sup>	64.9	63.3	63.3	63.9	63.6	64.1	63.3	97.0	***

<sup>a</sup>chicken (S1133, KF741765.1) origin ARV; <sup>b</sup>turkey (D1246, KR997918.1) origin ARV; <sup>c</sup>“novel” waterfowl origin ARVs: Muscovy duck (ZJ00M, KF154119.1), Pekin duck (HC) and Goose (03G, JX145337.1); <sup>d</sup>“classical” waterfowl origin ARVs: Muscovy duck (ZJ2000M, KF306090.1) and Goose (D20/99, KF809671.1); <sup>e</sup>new emerge duck reovirus: Pekin duck (D2533/6/1-10, MH520094.1; Ych, MK173038); The amino acid sequence identities were highlighted with the gray background.